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MAY, 1930

COTTON

THE TEXTILE MANUFACTURING JOURNAL

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May, 1930

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ROBERT W. PHILIP, Editor

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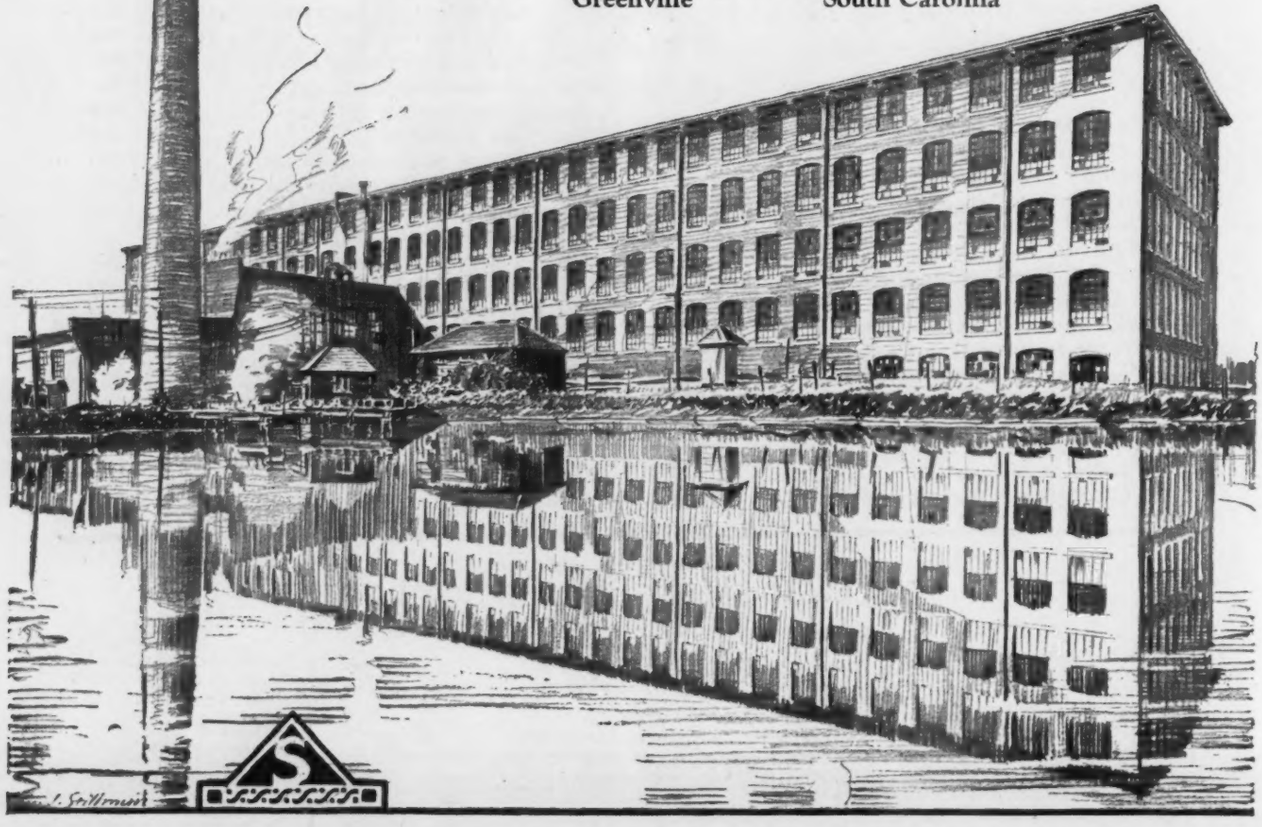
Reflected in Chiquola's Record — Modernization as a *fixed* Policy

IN the annals of the Textile Industry few cotton mills have achieved a sustained record of profitable operation more noteworthy than that of Chiquola Manufacturing Company at Honea Path, S.C.

The uninterrupted dividend record of this mill reflects a definite policy of keeping the mill constantly up-to-date in every feature:—equipment, power application, management, labor relations.

This organization of Engineers, in its early days nearly thirty years ago, planned, designed and supervised construction of this cotton mill. The intervening period has been a record of constant co-operation with its client in helping the plant to an ever new peak of productive efficiency.

J. E. SIRRINE & COMPANY
Engineers
Greenville South Carolina



COTTON

Vol. 94 May, 1930 No. 7

Knitting Week *in* Philadelphia

Knitting Arts Exhibition and National Association Convention Will Make Philadelphia the Mecca of Knitting Interests May 12-16

ALL INDICATIONS are that the stage is set and everything is in readiness for the annual Knitting Arts Exhibition, to be held at the Commercial Museum during the week of May 12th-16th; and the National Association of Hosiery and Underwear Manufacturers' 26th annual convention, which will be held at the Museum, in conjunction with the Exposition, on Thursday morning, May 15th.

General Manager Chester I. Campbell, and his corps of assistants, in charge of the Exhibition, have provided, as usual, an attractive show in which the customary largest number of machinery, supply and equipment, yarn and other firms will participate with educational and entertaining exhibits. The knitting industry has come to recognize the Exhibition and convention as the paramount opportunity to meet on common ground all factors in the industry, and a splendid attendance from mills all over the country, with representation from foreign countries, is assured. Especially is attendance vital, with the prevailing conditions in the industry, when it is so necessary to keep in step with progress, and changes, and the industry as a whole recognizes this.

Left, J. N. McCullaugh, managing director, National Association; right, C. I. Campbell, general manager, Exhibition.

Many manufacturers have already announced new machinery and equipment which will be displayed and demonstrated, and there are, according to report, others who will have to offer some revolutionary surprises in the way of equipment and supplies. Of especial interest is the full-fashioned division of the industry, and, from the standpoint of circular manufacturers, it is understood that a concentrated display of Guildmode hosiery may be presented, showing the numbers manufactured by the various members, and demonstrating the variety of individual touches which have been this new type of hosiery.

By arrangement with the National Association of Hosiery and Underwear Manufacturers, a special meeting devoted entirely to a discussion of quality mercerized yarns will be held by the Durene Association of America on Wednesday, May 14th, from 2:30 to 4:30 P.M., in the convention hall. This meeting, it is announced by John Nash McCullaugh, managing director of the National Association, will be an integral part of the program of the Knitting Arts Exhibition. An interesting program for this meeting is being arranged by the Durene Association, and it is expected to attract a large attendance of hosiery and underwear manufacturers who will be in Philadelphia attending the Exhibition and National convention. As tentatively outlined, the program will include a talk on the purpose, aims and accomplishments of the new organization of the Durene Association by Ernest L. Starr, director-treasurer; an address on the importance of Durene in retail merchandising by a prominent retail store executive, and an address on styling Durene underwear and hosiery by Kathryn I. Day, fashion adviser of the Durene Association. Miss Day will illustrate her talk with samples of well-styled Durene merchandise. The program will be completed with an address, "Durene Marks a New Era in the Cotton Industry," by J. S. Verlenden, president of the Durene Association and of the Mercerizers' Association of America.

Fashion will occupy the position of prime importance on the program of the convention of the National Association of Hosiery and Underwear Manufacturers, which will be held at the Commercial Museum on Thursday morning, May 15th. R. C. Kramer, associate director of Amos Parrish & Co., New York City, the largest fashion organization in the country, will deliver the principal address at this convention. His subject will be "Fashion on a Business Scale."

Entertainment at Luncheon.

John Wyckoff Mettler, president of the Interwoven Stocking Co., New Brunswick, N. J., is president of the association, and will be a speaker at the Thursday morning session. This session, and the annual luncheon to be held immediately following, will constitute the convention. Entertainment for the luncheon will be furnished by the Albert B. Myers orchestra, consisting of 12 pieces. It will play throughout the luncheon, which is scheduled to start at 1:00 o'clock in the dining hall of the Museum.

DURENE

By Emma L. Fetta

Durene Association of America

THIS ARTICLE tells something of the purposes, aims and accomplishments of the Durene Association, in connection with durene yarn. It will be of especial pertinence in view of the approaching meeting under the auspices of the Association, at the Philadelphia knitting show, to discuss these subjects.—THE EDITOR.

◆ ◆ ◆

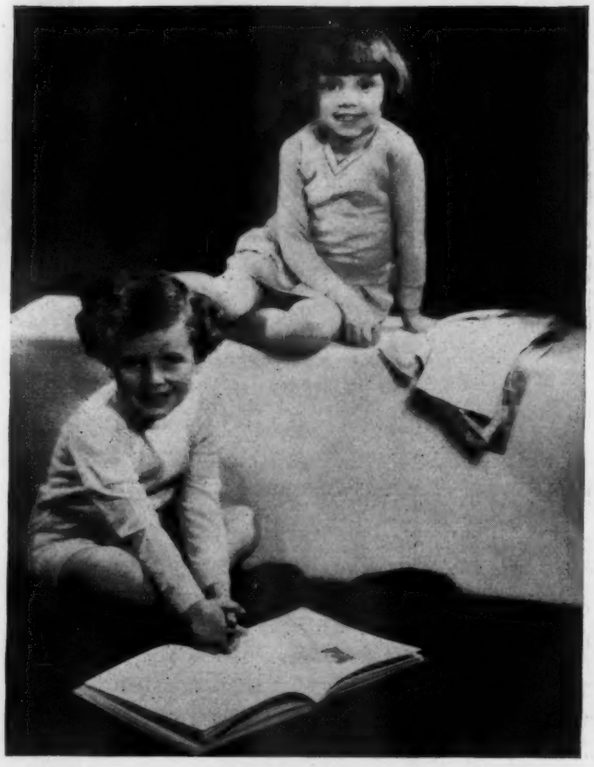
ORGANIZED TO WORK through educational channels with manufacturers, wholesalers, retailers and consumers, The Durene Association of America is not only carrying a new message to users of this yarn, but is working directly with knitters, weavers and retailers on practical problems of styling and promotion.

E. L. Starr, director-treasurer of the Association, reports that the results of the first two months of activity on the part of the national headquarters in New York have uncovered a wide-spread interest in more intensive and better styling for staple durene merchandise, and interest in a variety of highly desirable new uses in the volume as well as specialty fields.

Prominent among the new uses for "durenized" cotton are sheer knitted underwear materials for sports and street wear. Their introduction to the market will create an entirely new trend in the underwear market. Experimentations now under way have largely resulted from the styling assistance, and general co-operation given underwear manufacturers throughout the United States by The Durene Association.

Although considerable interest is fastening upon durene as a woven fabric medium, the major production is as yet confined to hosiery and underwear fields, where durene manufacturers are finding great demand for the high quality yarns stipulated by The Durene Association Standards. It is interesting to note that these standards demand the use of long stapled combed yarns. Yarns must be two-ply, thus presenting duo-surface for light reflection. They must also be mercerized—or "durenized"—under standard requirement of chemical and technical determinations agreed upon by all members of the association.

Among the older uses of durene which now have wide and accepted use, are sports hosiery for men and women. This field includes hosiery for active sports such as golf, tennis and polo. It covers also men's fine hose for general use, a type frequently known incorrectly under the term lisle, which, in reality, designates only the twist of the thread and not its inherent and processed character.



Brother and Sister suits of fine mesh knit durene in clear summer shades, from among a number of interesting uses of durene. Made by Augusta Knitting Corp.

Photo, Tony Von Horn.

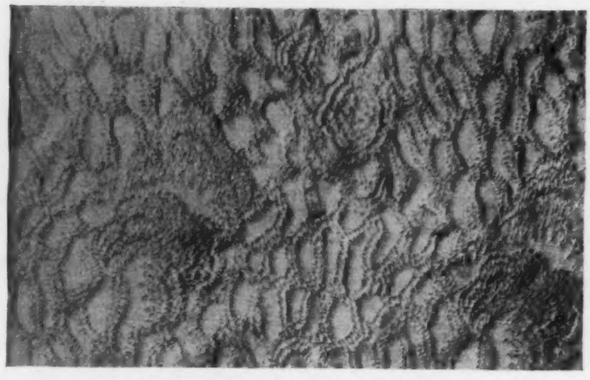
Durene welts, toe and heel re-enforcements for women's silk hosiery present a comparatively new use. These strengthening uses are a far cry from the old fashion cotton top, toe, and heel with its unpleasing contrast to the silk of the boot. At the present time, finer counts of durene are being used for these supplementary purposes because of their harmonious luster and general textile compatibility in combination with silk; and because of their strength-giving support in the places where strain is greatest. Many hosiery manufacturers are foreseeing in this usage new sales-points of importance in so competitive a market as the hosiery field.

Children's socks of durene have been proved to have much to commend them to the attention of retailers and consumers because of their charmingly soft luster, high absorbency and durability. A number of American manufacturers are working on high styling notes in children's durene socks.

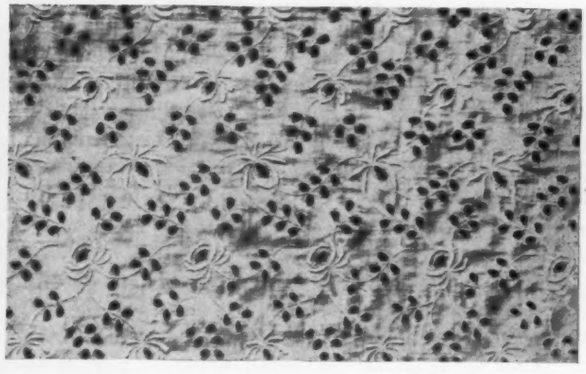
The now wide-spread durene underwear field presents a number of angles for interesting observation as already in part pointed out. The women's field includes a staple market already consuming a considerable volume, as well as many indications of new styling and handling methods which will shortly make new durene inroads into the retail market. But the men's

The bridesmaids' frocks shown in the sketch were created from original designs of James McCutcheon & Co., New York, who engaged artists and embroiderers to make a number of exclusive designs employing durene for the motif on a series of styled fabrics.

Some Interesting Applications of Durene



A lacy cotton marquisette employing an embroidered motif in fine durene yarns.



A sheer cotton batiste embroidered in softly lustrous durene yarns.

field is quite as important, presenting this spring to the trade much merchandise of excellent workmanship and styling. Men have long played faithful to cotton underwear, but durened cotton carries this interest several steps further because of the greater absorbency offered; the increased softness, and durability, and an unexaggerated lustrous quality which is appealing in men's wear and which may be sold with guarantees of permanent finish capable of withstanding many launderings. Durene seems particularly fitted to the somewhat tailored character of men's underwear.

Children's underwear has opened and is opening large fields to users of durene. On the market at the present time are innumerable standard durene garments for infants and children—such as Reuben's shirts and the Augusta Knitting Corporation products. These garments claim attention to their porous characteristics; their fine meshes which admit air and sunlight; their color fastness, and general affinity to appealing dyes. Durene shirts, panties, union suits—complete infants and children's lines—from many of the leading manufacturers of the country are now available to the trade. Innovations include sun-suits, practical play suits, suits for beach wear and bathing, street suits in mesh knits with skirts or shorts, pull-on shirts, and cardigan coats. The later two-and-three-piece ensembles are reaching out of the children's field into that of adult sports wear, with wrap around skirts, and a variety of polo, pull-on and other shirts and coats for women. Some of these are already on the market; others in the making; while many manufacturers report experimentations under way.

There seems to be but a step now to a widespread interest among knitters and weavers for mixing durene with other textiles. The new durene-nyon fabric is a prominent example. Decorative fabric manufacturers founded the custom of mixed mercerized cotton with other fibers, and looking back, observers of the mercerized cotton industry recall that as long ago as 1897 its first demand in the United States came from silk manufacturers who wished to use it for warps. This was also the case abroad. Thread converters, upholsterers and drapery manufacturers were enthusiastic users of the early mercerized production, while knitters both in the United States and abroad were slower to adopt a yarn which today they consume as majority users.

The Need *of* Accurate Testing *in* TEXTILE PLANTS

By A. P. Aldrich, Jr.

FOLLOWING a description in these columns several months ago of a regain indicator for lap regulation, the accompanying article describes the use of this equipment, in conjunction with other equipment described, in providing a laboratory for the mill; and discusses a method of basing tests upon uniform regain conditions.—THE EDITOR.

IT IS A WELL KNOWN FACT that the breaking strength of yarn varies with its moisture content. For the coarser yarns, this is a fairly uniform variant; the strength changing about 6 per cent for each change of 1 per cent in regain. For finer counts, the variations may be much more pronounced.

Since cotton yarn has no inherent strength of its own, like silk or rayon, but is held together merely by friction between the numerous fibers twisted together, an increase or decrease in the amount of this friction exerts a tremendous effect on the strength of the yarn. And since changes in moisture make a change in the friction between the fibers, it is important to make all tests under uniform moisture conditions. A great many yarns are sold on a guaranteed strength basis, which makes a positive and accurate determination of breaking strength quite necessary.

If a mill tests its yarn in a humidified spinning room, and a buyer breaks it in his office, where the regain may be down to three or four percent, there is going to be a big discrepancy in the breaks they get. Conversely, there are mills that have their testing machines in the superintendent's or overseer's office, and the customer will test in a carefully conditioned laboratory. In the first case, the customer complains about the yarn being weak, and a dispute has to be settled; frequently attended by hard feelings on the part of the buyer, and a belief that he is getting trimmed. In the second case, the mill may be wasting thousands of dollars a year buying longer cotton than they need, or by cutting down production to increase a breaking strength that was plenty good enough if they had only known what it really was.

The same holds true in making sizings at the mill. If sizings are made in a heated office in the winter, and one with the windows up in summer, there is no way to tell the real weight of the material. Under such conditions, a 50-grain sliver may weigh from 48 to 52 grains, and roving and yarn vary in the same proportion.

It is obvious that there should be some remedy for such hit-or-miss methods; and the remedy is to make all tests for break and weights in a room where uniform regain conditions can be maintained. Mills that have made yarn or fabrics on which there are definite strength specifications have found it absolutely necessary to provide such laboratory equipment, but to a large extent, mills that have not been forced to do so have not provided the proper conditions for testing. Perhaps this has been due partly to the expense of equipping a laboratory, and partly to a failure to realize just how expensive it may be

WEIGHTS OF 1 YARD OF DRAWING SLIVER				WEIGHTS OF 12 YARDS OF ROVING							
55.5 DRAWING		70.5 DRAWING		.88 ROVING		2.58 ROVING		.72 ROVING		2.08 ROVING	
INDICATOR READING	DRAWING WEIGHT	INDICATOR READING	DRAWING WEIGHT	INDICATOR READING	ROVING WEIGHT	INDICATOR READING	ROVING WEIGHT	INDICATOR READING	ROVING WEIGHT	INDICATOR READING	ROVING WEIGHT
5.0%	54.5	5.0%	69.2	5.0%	111.5	5.0%	38.1	5.0%	136.4	5.0%	47.6
5.5	54.7	5.5	69.6	5.5	112.0	5.5	38.3	5.5	137.0	5.5	47.8
6.0	55.0	6.0	69.9	6.0	112.6	6.0	38.4	6.0	137.6	6.0	48.1
6.5	55.2	6.5	70.2	6.5	113.1	6.5	38.6	6.5	138.3	6.5	48.3
7.0	55.5	7.0	70.5	7.0	113.6	7.0	38.8	7.0	139.0	7.0	48.5
7.5	55.7	7.5	70.9	7.5	114.2	7.5	39.0	7.5	139.6	7.5	48.7
8.0	56.0	8.0	71.2	8.0	114.7	8.0	39.2	8.0	140.3	8.0	49.0
8.5	56.2	8.5	71.5	8.5	115.2	8.5	39.4	8.5	140.9	8.5	49.2
9.0	56.5	9.0	71.8	9.0	115.8	9.0	39.6	9.0	141.6	9.0	49.5

Fig. 1. This is a chart or table used by a yarn mill for sizing drawing and roving. Under each weight of drawing is shown the proper weight for each reading of the regain indicator, and the same arrangement is used for the roving. In making sizings, no attention is paid to the theoretically correct weight of the material. It is always weighed to what the chart shows for the moisture content as shown by the regain indicator.

to employ such guesswork methods.

With the keenness of present-day competition, it behooves a mill to keep close to the actual weights of what they sell. It is quite natural for a buyer to be satisfied if the goods are better than he bought, and kick if they are poorer. To make sure that they are on the safe side, many mills take a heavy loss on overweights that could be avoided by proper testing equipment. That this loss is no small matter can be seen by estimating it for a mill having an output of 1,000,000 pounds of goods a year, and giving an average of 2 per cent overweight to play safe. This will amount to 20,000 pounds of goods. Figure it at your costs!

It is a general practice in all mills to make several sizings from each process during the day, but unless these sizings are made under uniform regain conditions, they may be very misleading, and a great many unnecessary draft-gear changes may be made.

Many mills have found that by proper allowance for moisture variations in the finisher laps, and correct testing methods, that they can completely eliminate all draft-gear changing. Of course, the place to begin work on getting even numbers is in the picker room, and it is very generally accepted as necessary practice to correct the lap weights for moisture changes. Assuming that this has been done, and that all laps going to the card room have the correct actual cotton content, it then becomes increasingly necessary to take into account the variations in weights of stock in process, and know with certainty whether these variations are real or apparent. A 12-yard sizing of roving, placed on the scale and allowed to remain there all day, may vary in weight by several grains during the day. Therefore, unless the moisture content which causes this variation is known, it is impossible to tell what the real weight of the sizing should be.

There are two satisfactory methods of making sizings with accuracy, but only one really correct way to determine strength. For the purpose of making sizings, it is immaterial whether the sample to be weighed has a fixed, standard moisture content or not, so long as its actual regain is known. If the regain is known, the correct weight of the test sample at any desired standard can be quickly calculated. There are two reliable methods of determining the regain in the test samples. One is to weigh them, and then bone dry them to find the loss in weight, from which the regain is calculated. A recently developed method is to use a regain indicator, which shows the regain in a standard sample or element, and expose the test samples to the same atmosphere as the indicator for a sufficient length of time for them to reach the same condition as the

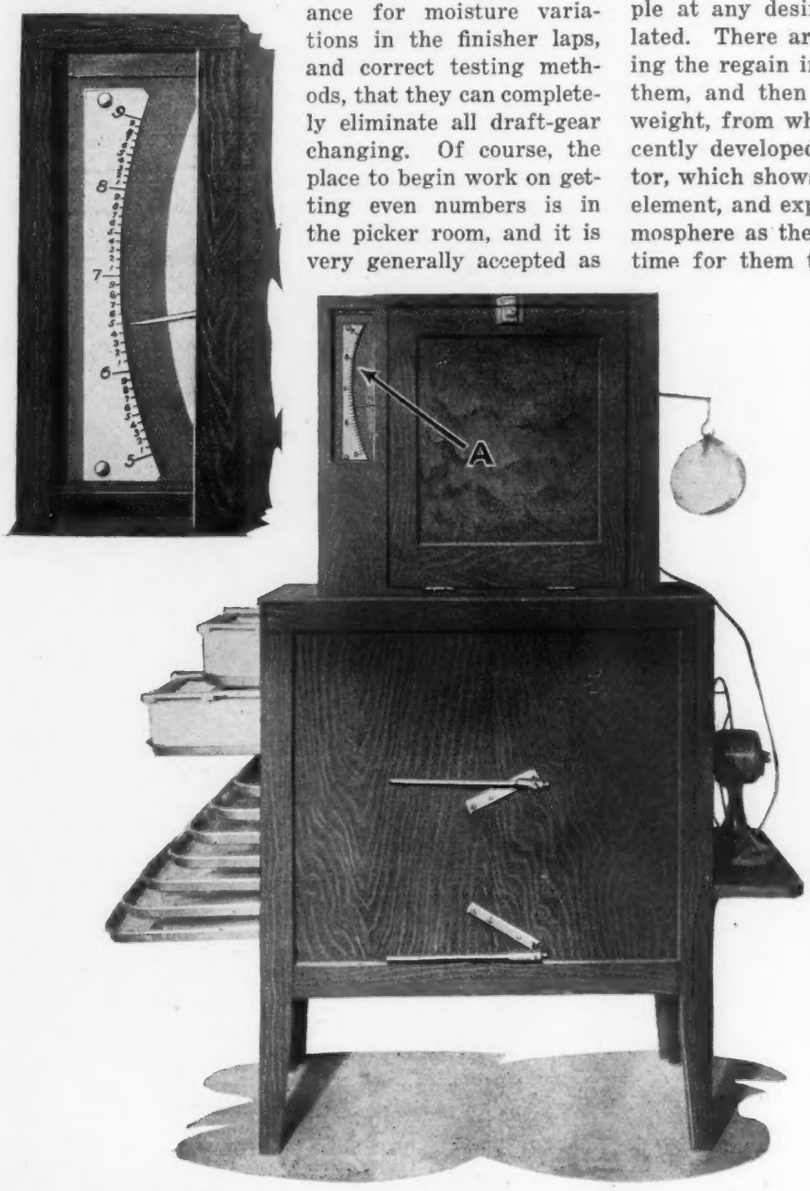


Fig. 2. To the right, a laboratory regain control combining a humidifying and dehydrating arrangement. The electric fan shown on the right drives the air through the cabinet, and the dampers which are controlled by the handles seen in the front may be thrown to cause the air to pass through the moistening, drying, or circulating chambers as may be required. The top chamber contains a humidifying arrangement composed of strips of absorbent cloth mounted on pins, which will evaporate about a quart of water an hour, enough to humidify a fair size laboratory. When the natural regain is too high, calcium chloride is sprinkled in the pans shown underneath the moistening arrangement, and the dampers thrown to cause the air to pass over this chemical. About half a pint to one pint of water an hour will be absorbed, depending on how high the regain is. This will condition any medium size laboratory in an hour or two.

The essential feature of this arrangement is the regain indicator at the top, which shows the exact condition of the room in terms of regain. If the indicator, marked with arrow A, shows the regain to be too low, the damper is thrown to humidify the air. If the indicator shows the regain to be too high, the damper is thrown to dry out the air. To the left is shown a close-up of the dial of the indicator, A.

standard element on the indicator.

Where a regain indicator is used, it is not necessary to have a conditioned laboratory, but merely necessary to have a closed room where there can be no sudden changes in atmospheric conditions. The indicator will show the regain in any test pieces left in the room long enough to condition, and when the sizings are made, the variations from standard regain are taken into account. This is done by means of readily prepared charts, showing the correct weight in grains for each sizing, so that no calculations by the person making the sizings are needed.

Such a chart should show each weight of sliver, each hank roving, and each yarn number to be sized. The correct number of grains that each sizing should weigh for each reading of the indicator is shown directly on this chart. Figure 1 shows a chart used by a yarn mill for card room sizings. It will be noted how simple the correction for regain is when done this way.

Fig. 3. Combination Automatic Power Yarn and Cloth Tester.

In testing for breaking strength, however, it is not possible to test at one regain point and correct to another with much accuracy. For coarse yarns; for tire cord, and for twines, there is a fairly constant variation in break as the regain varies, but this is not very accurate except within small limits, and some laboratories do not consider this method satisfactory under any conditions. Certainly, the only really accurate tests are made at a fixed regain point. Tests so made are always comparable with other tests under similar conditions, and are never open to criticism.

It has formerly been an expensive matter to properly condition a laboratory to a fixed regain point. Early methods depended on keeping a constant temperature and relative humidity, and as there will be many days during the years when the relative humidity is too high or the temperature is too high, or both, refrigeration was the only method of keeping a laboratory conditioned. The refrigerating plant was an expensive proposition both to buy and to run, and none but large plants, maintaining expensive laboratories could afford them.

Of course, maintaining a constant temperature and constant relative humidity automatically maintains a constant regain, but as it is the actual moisture in the yarn that affects its strength, and the temperature has very little to do with it, it really makes no difference what the temperature in the laboratory may be as long as it does not get too high to allow a person to work. Therefore, the regain in the laboratory can be controlled by removing moisture from the air when the relative humidity is too high, or adding it when the relative humidity is too low, and neglecting the temperature.

To raise the relative humidity in a laboratory, is naturally a very simple matter, but lowering it has been more or less of a problem. This problem has, however, been satisfactorily solved by the use of calcium chloride for drying out the air. Calcium chloride is a harmless chemical which has a tremendous affinity for water, absorbing five or six times its weight of water from the air. It has the advantage of being very cheap, costing less than 2½ cents a pound, and seldom more than two pounds a day is necessary in a small laboratory.

A laboratory suitable for ordinary cotton mill use need not be more than ten feet square with a seven foot ceiling, giving a cubical content of 700 cubic feet. This quantity of air at a temperature of 75 degrees, and a relative humidity of 47, corresponding roughly to 6.5 per cent regain, will contain 4.4 grains of moisture per cubic foot. On excessively damp days when the relative humidity may go to 65 or even 75, there may be a maximum of 7.0 grains of moisture per cubic foot. Therefore removing 3.6 grains of moisture per cubic foot from the air will reduce the relative humidity from 75 to 47, and the regain from slightly over 10 per cent to the desired 6.5 per cent. In a laboratory containing 700 cubic feet of air, this requires the removal of 2,520 grains of moisture. Trays of calcium chloride exposed to the draft of an electric fan will quickly remove this amount of moisture, bringing the laboratory to the desired regain point.

In dry weather when the regain is below normal, it can be brought up by the use of an ordinary humidifier head, or some other form of moistening equipment. Figure 2 shows an arrangement for both dehydrating and moistening, which gives a complete regain control in one assembly. This cabinet consists of three partitions. The upper contains two trays filled with water, and in this water is placed a rack containing a number of zig-zag strips of toweling or other absorbent fabric. In the particular arrangement illustrated here, there is an area of about 3½ square yards of fabric exposed to the air. Two trays so equipped will evaporate approximately a gallon of water in ten hours. Since this is over 56,000 grains of moisture, it only takes a few minutes to bring the humidity up to the proper regain point in a small laboratory. The dehydrating section of this cabinet contains a number of trays of calcium chloride, and at the bottom of the cabinet is an open vent which allows a simple circulation of air. Suitable dampers in the cabinet are so arranged that the air can be driven through the moistening chamber; the de-hydrating chamber, or simply circulated without either moistening or drying. Constant circulation of air is absolutely essential in a laboratory, which accounts for this cabinet being arranged with

(*Continued on page* 811.)

Knitting and Spinning Are Discussed *at* Greensboro

THIS REPORT covers the joint discussion of spinning and knitting problems at the Greensboro meeting of the Southern Textile Association. Whether a spinner or a knitter, the reader should study this carefully, because there is much of interest to both.

As an initial effort, and in spite of a small attendance, the knitting discussion was interesting. Knitters among our readers are invited to extend this discussion by submitting their views on the various questions for publication.

—EDITOR COTTON.

AT A MEETING held at the King Cotton Hotel in Greensboro, N. C., on Tuesday, April 15th, the Southern Textile Association held its first meeting to discuss knitting mill problems. At the same time, the spinning division of the Association conducted a discussion with regard particularly to hosiery and underwear yarns, the thought being to introduce the knitters to the method of conducting practical discussion; and to provide a means of discussion of problems of mutual interest in connection with the manufacture and use of knitting yarns.

A hosiery yarn manufacturer, H. Gilmer Winget, of the Winget and Victory Yarn Mills at Gastonia, was in charge of the meeting, and A. N. Hill, superintendent, Melrose Knitting Mills, High Point, assisted in connection with the specifically knitting discussion. Although the attendance was small, it was felt that a definite start was made in this meeting, and that with a greater interest manifested by knitters, there exists a possibility of a helpful and constructive division in the future, devoted entirely to knitting mill subjects.

After the meeting was opened, Chairman Winget entered into the practical discussion. There was no set schedule, some of the questions pertaining to yarn manufacture and some to knitting. The first question, however, was of mutual interest, and was read by the chairman as follows: "What, in your judgment, is a good hosiery yarn?"

What is a Good Hosiery Yarn?

W. A. Ball, superintendent of the Carolina Knitting Mills, Burlington, N. C., was asked, as a user, what he considered the major requirements of a knitting yarn. "In the first place," Mr. Ball responded, "the yarn should be good and clean, soft, and with as few knots as possible. We knitters have more trouble with knots than with anything else we run across."

A. P. Richie was asked to discuss the subject from the standpoint of a spinner. He said that he was not as experienced in making hosiery yarns as in making those kinds with more twist, but agreed with Mr. Ball. He pointed out that a yarn could be free from slugs and gouts and still contain a good many knots. He said that from a spinning standpoint, he felt that a man's frames should be in good shape, using good rolls, etc., and that the frames should be cleaned properly, a good cotton used, and the yarn held to the true number. He pointed out that some hosiery orders specify 30s "on the fine side" and 30s "on the heavy side," and that this sometimes is confusing to the yarn mill man.

A. N. Hill, superintendent of the Melrose Mill, was another knitter called upon. He said that, "a good hosiery yarn should be made of good cotton. Assuming that you are talking about carded cotton yarn, I find that for the past six months the yarn seems as if it is not made out of as long a staple of cotton as it should be, and there is a little bit too much twist. It depends to a certain extent on whether you are going to run it in the heel and toe, or the body of the stocking. If you are going to run it in the heel and toe you cannot have as much twist. Most of the spinners are getting their yarn pretty clean now, I think."

Type of Knot Preferred.

The chairman here asked the knitters whether they prefer to have weaver's knots or chicken-head knots in their yarn. Mr. Ball said, "we do not like the chicken-head knots at all," and all present seemed to agree with him. Mr. Richie asked whether the knitters preferred weaver's knots tied by hand or the same kind tied mechanically, explaining that there is a difference, saying that the hand-tied knot is flatter. Mr. Winget pointed out that with the mechanical knotter more uniform knots are produced, whereas by the hand-tying method, some knots might have longer "tails" than others. Mr. Ball replied to the question, stating that while he did not know the difference between hand-tied knots and mechanically-tied weaver's knots, the weaver unquestionably prefers the weaver's knot; adding that, however, it was his understanding that most of the cotton yarn they purchase is tied, in weaver's knots, by the mechanical method.

Tension on Cones.

Chairman Winget next submitted the question, "Should cones be wound at a light or a heavy tension?" adding that this undoubtedly depends upon the class and number of yarn.

F. C. Todd, formerly superintendent of a knitting yarn mill, stated that he had preferred the heaviest weight he could run. "I got better results and had less kicks on my yarn. It seemed to make a firmer cone; and the imperfect places in the yarn would always break back. In my six years' experience on that yarn I found that the heaviest weight I could run gave me the best and firmest cone, and a better running yarn on the knitting machine. I had a 14-cut underwear machine in my office, and I tested my yarn each day on it, testing it on the light and heavy tension, and I found that this knitting machine ran much better, with less press-offs, with the heavy tension."

Effect of Slubs on Knitting Machine.

"What effect does a slub have on the needle in a knitting machine?" was next asked by Mr. Winget.

In answering, A. N. Hill explained that, "slubs come through the latches and throats of the needles, and will bend the hook. If it is pretty large it will bend them all the way out, and the latch then goes under the hook and that will make a piece of waste. On the other hand, you might find some that are very small, that will spring the hook out just a little bit, and these are the things that give the most trouble, because the latch goes under the hook, and you will get a drop-stitch, and if the knitter is not on the job, it will make several pairs or maybe several dozen in this manner. When a gout goes in, it tears up lots of needles, and they cost five cents apiece. I would say that on 176- to 220-needle work, coarse yarn, it will cost around $1.00 to repair after a smash-up of this kind, just for the needles, to say nothing about the work involved and the time necessary to make the repair."

"The greatest trouble we have," added Mr. Ball, "is with these small slubs, as Mr. Hill says, making what we call 'rabbit-tracks' or tuck stitches, which makes the goods go into seconds."

Should Yarn Be Heavy or Light?

"What variation in yarn is permissible, or, rather, should the yarn be, preferably, on the heavy side or the light side of the specified number, in order to give good knitting?" was the next question.

J. V. McCombs, superintendent, Randolph Mills, Inc., Franklinville, N. C., stated that when he was formerly connected with a hosiery yarn mill, he found "that when I got on the heavy side the knitter got into trouble. If there is to be any variation, I would say to let it be on the light side, because our knitters could never take care of the additional twist when we went on the heavy side.

"Speaking of hosiery yarns," Mr. McCombs continued, "I think the greatest thing about them, excepting knots and gouts, etc., is a proper humidity or regain, and, when it goes to the knitter, he should keep that regain in the yarn, or there will be a lot of trouble. We put in a conditioning room and tried to carry a regain of not less than 6½ to 7½ per cent, wrapping the yarn immediately, and trying to send it to the knitter in that shape; and when the knitting room is carrying the proper humidity also, they do not have much trouble with the yarn in knitting."

Humidity in the Knitting Room.

"Do you believe in having humidity in the knitting room; if so, how much?" was next asked by Mr. Winget. Mr. Hill replied that in his experience it is advisable to have plenty, using fans throughout the room to make the conditions comfortable for the operatives. He said the machines run much better. The machines, he said, seem to run according to the weather, that you can tell 10 to 15 hours in advance of a change of weather. The humidity, he said, is especially necessary in connection with fine gauge machines. "In our silk department," he said, "we run 300-needle work, on pure silk, and I find that around 80 or higher is good, with fans to keep the mill cool enough." Mr. Ball said he does not have humidifiers, and had been in only a few plants equipped with them. Smith Williams of The Bahnson company, stated that within recent years, more knitting mills had been installing humidifiers, pointing out that the P. H. Hanes Company had been using them for eight or ten years, naming also a number of other knitting mills in the southern section which use humidifiers. He said that in full-fashioned mills, especially, humidifiers are essential in the manufacture of good hosiery.

Mr. Winget next asked the effect of oil-stained yarns on knitting. Mr. Ball replied that it is not so much the oil as it is the carbon deposit which seems to come off the machines with the oil, that gives most of the trouble in knitting.

Are You a Knitter?

If so, this report will give you some ideas of the men present at the Greensboro meeting on:

What Makes a Good Hosiery Yarn?
What Light is Best for Knitting?
How Often Should Sinkers be Changed?
How Should Rayon be Conditioned?
How Should Waste be Reclaimed?
Preventing Sinkers from Clogging.

and other subjects that will interest you. We invite knitters to continue the discussion of these subjects by wriitng their opinions in to the "Knitting Kinks" department of COTTON. If you agree with those quoted in the report, say so. If you disagree, give your experience, or if you can furnish additional information on any of the questions, tell us about it.—The Editor.

Fine Yarns on One-Process Drawing.

The chairman next asked the spinners present whether, in their opinion and experience, 80s or other fine yarns for knitting could be spun successfully with one process of drawing, using, of course, four processes of roving frames.

"I think you can make good 80s with one process of drawing if you have enough drawing so that you do not have to run over 180 r. p. m. on the front roll," said Mr. Richie of Gastonia. "But when you go above 200 r. p. m. I do not believe that you make as good a yarn."

"I think that the gentleman's statement is cor-

rect," said Mr. McCombs, "if you are on combed yarns, where you use ribbon lappers, and so on, but on carded stock I have found that the reverse is true, but I would rather have single drawings than double drawing if I had to run the double drawing over 350 r. p. m., though I have never been able to see what would take care of that doubling you get on the second process. That is somewhat taken care of by the combers, etc., where you have the ribbon lappers, sliver lappers, and combers."

Mr. Todd agreed that good yarn can be made with one-process drawing, provided you have the proper opening equipment and can card slowly, and can cut your speeds on the drawing frames to what Mr. Richie says, or even lower, as well as cutting the flyer speeds on the slubbers and other fly frames. I think the hosiery yarn mills are running their roving frames too fast, as a rule." He told of going into one mill and cutting the speed on the fly frames 20 per cent and taking out 20 per cent of twist, which ran the breaking strength of the yarn up by about 20 per cent. He told of another experience, where a mill using two processes of drawing, on 26s carded hosiery yarns, were running the front rolls at 400 r. p. m.; and that by cutting this to 200 r. p. m., and using one process drawing, they effected an increase of 13 pounds in the breaking strength of the 26s. "I think you can make a better yarn on one-process drawing, with a slow front roll speed," he said.

"I believe it is just as good, but I don't believe it is any better," commented Mr. Richie.

Are You a Spinner?

If so, this report will give you some ideas of the men present at the Greensboro meeting on:

What Causes Smutty Yarn?
Is Turning Spinning Rings Practical?
Reverse versus Regular Twist in Yarn.
One-Process Drawing on Fine Numbers.
Oil Stains on Twisters.

and other subjects that will interest you. We invite spinners to continue the discussion of these subjects by writing their opinions in to the "How Other Men Manage" department of COTTON. If you agree with those quoted in the report, say so. If you disagree, give your experience, or if you can furnish additional information on any of the questions, tell us about it.—The Editor.

Cork Rolls on Spinning Frames.

Experiences with cork rolls on spinning frames were next requested by Mr. Winget. No one present had had much experience on these. Mr. McCombs discussed the subject briefly, stating that, "I think the cork roll has a field, but I do not think it has been developed. I have had good success with them on heavy and medium numbers, never having run cork rolls higher than 30s. I found that the breaking strength always showed up just as good, and in some instances I believe I got a little better breaking strength on coarse numbers with the cork." Mr. McCombs added that he had used only the type of cork roll with which the spinning roll is turned down in size, and the cot is slipped on; that at the time he did not go into it in a big way for fear it might not be satisfactory, and he would have the turned-down rolls on his hands. He declared that he felt toward rolls a great deal as he feels toward belting, "that nothing is much better than a good leather belt," and that "a good leather roll, properly covered with a good cloth and good skin," is a pretty good proposition.

Mr. McCombs expressed the opinion that, "from an economical standpoint, after the cost of first equipment, I guess the cork roll is more economical," explaining that the cork covering may be re-buffed, and that they will stand three or four buffings. He said that one original handicap to cork rolls was that the first buffing machines were expensive, but added that now a machine is available for this purpose, costing only a few hundred dollars, with which a mill may do its own buffing.

The chairman asked whether the cork covering is put on with cement. Mr. McCombs explained that the type he had in mind was slipped or pushed on over the turned-down roll, but that there is a type of cork now available which is applied with cement, in the same way as a leather covering is put on, without turning the roll down, but that he has not used this type.

Mr. Richie asked with the newer type which is cemented on, if, after re-buffing, the roll has a "high side" on it. "I don't think, wtih this kind of roll, that they recommend re-buffing," replied Mr. McCombs. "It will not stand re-buffing. On the other hand, you can re-buff the other roll three or four times."

C. W. Alexander, overseer of spinning, Erwin Cotton Mills, Cooleemee, N. C., was asked for his experience, and replied that he has only two stands of cork rolls in use, and did not therefore feel justified in expressing an opinion. He said that he uses the type of covering with which the roll is turned down, and that with his limited experience he has noticed no difference in the breaking strength or evenness of the yarn, nor no more of a tendency for the rolls to lap up. In response to an inquiry, he added that when the cotton does lap up on the cork rolls, it is more difficult to get it off.

Turning Over Spinning Rings.

The chairman next asked, "Is it advisable to turn over spinning rings after they have run for several years?"

A. P. Richie said, "I have had a good deal of experience in turning over rings. I have tried turning rings over without cleaning them, and that is the poorest way of turning them over. I have tried taking them out and polishing them at the mill, and that made them run fairly well. Then I have sent them back to the shop and had them re-burnished, which gives a very good job, but rings which have been running on one side for, say four years, will not run over two years when they are turned over. They cause the travelers to wear out more quickly. I have come to the conclusion that it does not pay to turn over rings."

"I agree with him," said Mr. Winget.

"Especially with plate rings where they clamp the ring on," added C. W. Alexander.

"One of the biggest troubles in turning over rings," explained Mr. Winget, "was to get a suitable traveler that would fit all of the rings. The traveler man would say that he could fix you up, and he would take a sample ring to his office or send it to his factory, and bring the ring back, with a traveler which would fit that particular ring, but if you have a 264-spindle twister, you have 264 rings that are worn differently. I have found that the best thing to do with a ring that is worn out is to sell it."

Mr. Winget next brought up the question, "Should the twist multiple be more on reverse twist than on right-hand twist yarn?" Mr. McCombs replied, "My experience is that you can run less twist in reverse twist yarn. I used to make a lot of reverse twist for lace curtain yarns, etc. I suppose that at the time, 20 years ago, the Wampum Cotton Mills were making as much as anybody, and I think they run with less twist. There is a lot that can be said about the appearance of the yarn, and other things."

Chairman Winget said, "I happen to be running a mill that makes reverse twist yarn, 30s to 50s, and we have found that we have excellent running spinning on somewhat less twist, on the reverse twist. We hold to that on the 30s to 40s, making it somewhat softer, but when we get around 50s and do not have any better cotton, we put in a little more twist." Mr. McCombs observed that this would be necessary on any kind of yarn when increasing the number without improving the cotton.

D. F. Burns asked why it is that less twist can be run in reverse twist. A member suggested that the natural convolutions of the fiber would have something to do with it, and Mr. McCombs agreed. He said, "you could take a piece of cotton and turn it clockwise, and then take a sample of the same cotton and turn it counter-clockwise, the reverse twist strand will be smoother." Mr. McCombs expressed the opinion that if yarn made from the same cotton, with part of it twisted clockwise and part of it twisted counter clockwise were woven into the same fabric, he believed there would be a complaint as to the quality of the goods, because of the changed appearance.

Mr. Todd asked which of the two twists is more even. Mr. Winget said that, "our experience has been that we get a much rounder piece of yarn with reverse twist."

Mr. Todd suggested that it might be wise, under the circumstances as explained by Mr. McCombs and Mr. Winget, if a mill went back to the card room and reversed the direction of twist in the rovings. Mr. Winget agreed that it was entirely probable that, "the fellow who first started putting in twist put it in the wrong direction to begin with, and we have been following in his footsteps." He, and Mr. McCombs, however, brought out that there would be no advantage served in reversing the twist in the card room, since the function of twist insertion in this department was merely to hold the fibers together from one process to the other, pointing that the twist as inserted is removed in the various draft ing processes anyhow. It was left up to the members, however, as something to study.

"Can the hosiery mills use reverse twist yarn in the leg of the stocking?" asekd Mr. Burns. Mr. Ball pointed out that within recent years there has not been much occasion for this. He explained that a number of years ago, when ladies' cotton hose was being made with the hem being made on a sewing machine, there was some occasion for it.

Metallic Card Clothing.

The chairman asked next for experiences on metallic clothing on cards, but none of the mill men present had had experience with it. It was explained that the clothing in question was made of a special substance, put up similar to the shape of licker-in teeth. Experiences reported at other meetings, it was brought out, pointed to a reduction in the frequency of stripping and drafting, with a resultant increase in the amount of fibers passing into the sliver.

Oil Stains on Twisters.

Mr. Winget next asked the spinners how they prevent oil from staining the yarn on twisters. "The only way is to get a lubricant that, when you grease the rings with it, will go from one doff to the next," said Mr. McCombs, who added that he had tried all kinds of stainless oils, and after much experimenting and experience and trouble, had finally been able to secure one which is satisfactory. He added that he cleans the rings after doffing, and that his lubricant will run from one doff to the next satisfactorily.

Mr. Winget said that in his opinion the cleaning of the rings is probably one of the most important points in connection with this subject. Mr. McCombs said that he had found that the bronze traveler gives better results, so far as oil stains are concerned, than the steel traveler.

"I have a good deal of experience with black work on wet twist ply yarn," said Mr. Richie. "We run a twister 16 hours to the doff, and our greatest trouble is with black yarn. We do not have any trouble in keeping the rings oiled, if the oil is properly put on, but when we get a break in the creel, we black the bobbin which the end comes down on, and also the ones on the side of it. I think it is very essential that a man keep his spindles plumbed, and that he use good rings. This is one of the hardest problems a spinner has. It is bad on the knitter, expensive to the plant, and it is a very hard problem to overcome.

"I prefer a light grade of grease, instead of an oil, and I think there are some men who have done this: They have taken the brass water roll and made it the same size as the front roll, taking out all of the tension, so there will not be the breaking between the water roll and the delivery roll. I think it is worth while for a man, on wet twist, to go to the bigger rolls in the water trough."

(*Continued on page* 857 *where the knitting discussion will be found.*)

Thirty Years *of* Georgia Textile History

Mr. Swift.

An Abstract of the President's Address, Giving the Record of the Cotton Manufacturers Association; a Cross-Section of a Third of a Century's Time.

By Clifford J. Swift, Vice-Pres.
Swift Spinning Mills

SOMETIME DURING 1900 a group of mill executives, with many problems of mutual interest to discuss, met in Warm Springs, Georgia, and formed the Georgia Industrial Association. The late B. S. Walker, of Monroe, Georgia, was the first president of this organization, serving in this capacity for four years, and as evidence of the splendid foundation which he helped to build the Association has lived and grown continuously during the past thirty years.

Among the charter members who attended this first meeting in Warm Springs, were: B. S. Walker, of Monroe; F. B. Gordon, of Columbus; G. Gunby Jordan, of Columbus; Fuller E. Callaway, of LaGrange; D. A. Jewell, Sr., of Chickamauga; Jeff Davis, of Toccoa; J. L. Hand, of Pelham; S. A. Carter, of Atlanta; Chas. D. Tuller, of Atlanta; Col. J. J. Spalding, of Atlanta; Capt. H. P. Meikleham, of Lindale; H. L. Johnston, of Palmetto; L. C. Mandeville, of Carrollton; and W. C. Vereen, of Moultrie.

G. Gunby Jordan, a pioneer among the cotton mill executives of Georgia, very kindly furnished us with copies of two addresses which he made at meetings of the Association during its early days. One of these made at the first annual convention of the Georgia Industrial Association on May 30th, 1901, at Warm Springs, Georgia, where most of the early meetings were held. Manifesting a keen vision and foresight, in his address, Mr. Jordan discussed several vital problems that confronted the industry at that time, and he suggested many activities which the Association should undertake, and which later became necessary. He called attention to the unfavorable freight rates that existed at that time and urged the employment of a traffic expert to look after the interest of the Georgia mills. He predicted troubles that later arose over unfavorable labor and industrial legislation. He discussed the advisability of Southern mills installing machinery to manufacture finer fabrics than the very coarse goods that composed the bulk of the southern products at that time, and urged the mills to co-operate with the colleges and textile schools in an effort to train young men for positions of responsibility in the mills, so that improved methods might bring greater efficiency. Mr. Jordan emphasized at that time the necessity of giving close and careful attention to the physical, religious, and educational advancement of the mill operatives and their families, which I feel has been done by the mills of this state, as a whole, and I believe they will always continue to do everything in their power for the advancement of their employees.

As stated before, I am forced to pass over the period of 1901 to 1909 and that brings us to the Ninth annual convention held at Warm Springs, on June 11th, 1909. In the meantime, Fred B. Gordon, of Columbus, had been president of the Association from 1904 to 1908. Dr. Jeff Davis, of Toccoa, was selected in 1908 serving until the meeting in 1909 at which he presided. At that meeting we find the members were discussing a very serious period of depression caused by over-production, something we have heard of, of late. Members were urged to co-operate more closely through the Association. A note of optimism that reminds us of

WE ARE DEVOTING space to this review because it will interest many a reader. In charting the history of the Georgia association, it is in truth a cross-section of history, review and personal reminiscense to many a mill man who will read it with many a memory, and to whom incidents and persons of the past will be recalled by it. While confined to Georgia, we feel that readers throughout the industry will be interested in it, and urge that it be read as a matter of general information.

And, too, it will remind you that the industry had its troubles—and weathered them—long before the immediate conditions of today came along, or rather, presented themselves again.—THE EDITOR.

our present situation, was expressed in the hope that with the new tariff rates about to be settled in Congress conditions would improve.

The tenth annual meeting with Col. J. J. Spalding, as president, was held at the Oglethorpe Hotel, in Brunswick, Georgia. Much of the meeting was devoted to present abuses then of the New York Cotton Exchange, and again the importance of co-operation was emphasized. A pleasant session was held on Cumberland Island, at which time Chas. D. Tuller, of the Exposition Cotton Mills, Atlanta, was elected president for the coming year, and in 1911

Clifford Swift Says---

WE can make results better if every mill will balance production with demand and ascertain their actual cost of manufacturing, and get the habit of quoting prices that will show a profit. * * * We seem to be price-backward. Let's quote and hold for profitable prices and stop so much talking about prices that merely show cost. No mill executive should feel satisfied to go before his stockholders at the end of any year and say, 'We have not had such a bad year, as we have not lost any money.' "

Mr. Tuller carried the Association back to Warm Springs, Georgia, for its eleventh annual convention.

Many matters of importance were discussed and it is most interesting to note at that period twenty years ago there was in existence the "Textile Manufacturing Exchange," a national organization probably somewhat similar to our present Cotton-Textile Institute, in that it was engaged in the accumulation and dissemination of statistics relating to operating hours, productions, orders, stocks on hand, etc. The plan was evidently not built up on a sound basis as the Cotton-Textile Institute, therefore, it was discontinued. It was at this meeting that G. Gunby Jordan, delivered his splendid address on "Industrial Education," and that the urgent need of an efficient traffic department was again brought up and placed in the hands of the executive committee with the power to arrange for the financing of this work.

President Tuller was re-elected to serve a second year, but on November 11th, 1911, his many friends and associates were shocked to learn of his untimely death, so at the twelfth annual convention, held at Warm Springs, on June 11th, 1912, the late Fuller E. Callaway, the first vice president, presided, having consented to serve as president after Mr. Tuller's death. You will recall that during these early years this organization had existed under the name of the Georgia Industrial Association, having been created to include all manufacturing industries in the State. It had grown to be almost exclusively a textile mill organization, so at this convention a resolution was unanimously adopted to change the name to "The Cotton Manufacturers' Association of Georgia," which name it still bears. At the same time the by-laws were changed to provide for eight vice-presidents, who were to hold quarterly meetings in various parts of the State. Harry L. Williams, of Columbus, was elected secretary and treasurer, to succeed Hal L. Johnston, of Palmetto, who had resigned after serving for the previous three years. Harry Williams served as secretary and treasurer for several years and much of the progress of the Association was due to his splendid work. At this meeting, the Association also passed a resolution making it obligatory, with certain limitations, for all members to use the traffic department at a specified cost. This ruling no doubt was changed at some later date.

After having served as president of the Association from 1904, to 1908, Fred B. Gordon consented to comply with the unanimous request of the members and was again elected to that office, so the thirteenth annual meeting was held in Columbus, Georgia, on May 9th and 10th, 1913. The meeting was devoted to a discussion of legislation, tariff revisions, and conditions among Georgia mill employees, etc. On the last day of the convention the members enjoyed a pleasant visit to the new hydro-electric station at Goat Rock Dam.

Again serving as president of the Association, Mr. Fred B. Gordon, called the fourteenth annual meeting to order at the Piedmont Hotel, in Atlanta, on May 8th, 1914. The most interesting feature of this meeting was a report of the legislative committee made by the chairman, Mr. S. A. Carter, who called attention to the rather peculiar coincidence that, although the cotton manufacturers of Georgia had been assisting in drafting child labor bills for several years in an endeavor to get one passed by the legislature that would annul the earlier child labor law of 1910, which allowed children as young as 12 years of age to be worked, it had been impossible to get this law by both the Senate and the House.

Under the direction of President Allen F. Johnson, the fifteenth annual meeting was held at the Piedmont Hotel, in Atlanta, on May 18th, 1915. Among the most important matters discussed at this meeting were National Child Labor Legislation,

Mr. Swift Continues---

"I BELIEVE that most of us are operating our plants efficiently, and if this be true, then the one trouble existing today lies with the selling agents, and their not being able to secure profitable prices; therefore, I think that we should all insist that our selling agents secure profitable prices that will enable us to pay good wages to our employees and a fair return to the stockholders on invested capital. If this is done I can see no reason why we should not look to the future with pleasure and confidence."

which was then before Congress, and the need of greater co-operation between the mills and the farmers of the state. A Chinese cotton manufacturer was present at this convention, and made a very interesting talk. After having faithfully served the Association as its secretary and treasurer for a number of years, Harry L. Williams found it necessary to resign because of his new duties as president of the Swift Manufacturing Company, and P. E. Glenn, of the Exposition Cotton Mills, was elected to

(*Continued on page* 814.)

Ga. Mill Men Meet *in* Atlanta

Thirty Years of Association's Actvity Reported by Retiring President Clifford Swift; D. A. Jewell, Jr. is New President

ENDORSEMENT by resolution of the 55-50-hour work week for the cotton textile industry (described elsewhere in this issue); the election of D. A. Jewell, Jr., as president for the coming year; and discussion of problems of legislation, traffic, etc., featured the 30th annual convention of the Cotton Manufacturers' Association of Georgia, held at the Atlanta-Biltmore Hotel, on Thursday and Friday, April 3rd and 4th. Clifford J. Swift, vice-president and general manager, Swift Spinning Mills, Columbus, Ga., presided at the sessions as president.

The first session was held on Thursday evening, and was of an executive character, the discussions pertaining to various phases of the Association's activities and of matters affecting the industry of the state. An innovation was a buffet supper served in the meeting hall at the conclusion of the evening session.

Left, T. M. Forbes, re-elected secretary; right, D. A. Jewell, Jr., the new president.

On Friday morning, the general session of the convention was held. Dr. M. L. Brittain, president of the Georgia School of Technology, made the address of welcome, urging greater interest in the school and its textile department in particular on the part of the mills. Dr. Jeff Davis, of Toccoa, Ga., one of the Association's first presidents, responded, telling in an interesting way of some of the earlier history of the organization. The featured speaker was Hon. S. Price Gilbert, associate justice of the Supreme Court of Georgia, whose address gave extensive figures as to the industrial growth, particularly along textile lines, in the South. Judge Gilbert urged greater teamwork among industrialists, and a greater interest on the part of laymen in the affairs of government. He denounced strongly the efforts of the communistic element in this country.

President Swift next presented the report of the president. Since this was the 30th anniversary of the association's existence, Mr. Swift delineated the development of the organization, by discussing briefly each of the 30 annual meetings, and concluded by offering his views as to the future of the industry. As a record of southern textile development, and as a cross-section of the conditions prevailing at each of the meetings reviewed, this paper was of unusual interest, and it is reproduced in large part on page 757 of this issue.

The reports of D. W. Anderson, treasurer, T. M. Forbes, secretary, and C. W. Chears, traffic manager, concluded the morning session, following a discussion and the adoption of a special resolution pertaining to the 55-50 hour work week, as previously mentioned.

A luncheon following the Friday morning session concluded the convention. At this time further resolutions were adopted, and the election of officers held. One of the resolutions adopted pointed to the advantages of the association to knitting mills as well as spinning and weaving mills, and urged that a campaign to enlist the hosiery and other knitting mills of the state as members be conducted. Another resolution approved the recommendation, to the American Cotton Manufacturers Association, of certain changes as proposed by the cotton committee in the southern mill rules pertaining to cotton.

At the luncheon, the past presidents of the association who were in attendance were introduced to the meeting. These included Dr. Jeff Davis, D. A. Jewell, Sr., P. E. Glenn, J. A. Mandeville, George S. Harris, W. H. Hightower, and J. J. Scott. Each of these men spoke briefly Dr. Jeff Davis, in behalf of the association, presented a handsome wrist watch to Retiring President Swift as a token of esteem for his services and interest in the association.

Dr. J. L. McGhee, of Emory University, who through the assistance of the association and individual mills, has been conducting an extensive experiment with regard to the curing of anemia, reported briefly, stating that his experiments had reached a conclusive stage, and thanking the mills for their support. Mills were invited to send their nurses, physicians or other health workers to the University for studying this work.

In the election of officers, D. Ashley Jewell, Jr., vice-president of Crystal Springs Bleachery, Chickamauga, Ga., was elected as president succeeding Mr. Swift. D. W. Anderson, general manager of the Pacolet Mfg. Company, New Holland, Ga., was made vice-president, and Norman E. Elsas, secretary, Fulton Bag and Cotton Mills, Atlanta, Ga., was named treasurer. T. M. Forbes, secretary, and C. W. Chears, traffic manager, were re-elected to these positions.

A Report of Progress on the
55-50 Hour Week Program

GRATIFYING REACTIONS are being reported to the Cotton-Textile Institute from all over the United States in regard to the recommendations recently submitted to the cotton industry by a number of representative mill executives looking to greater uniformity in running time and greater contentment on the part of mill employees.

BEYOND its specific effects, an impressive feature of the 55-50 hour work week, described in this brief article, is the wholesome result it has secured in creating, among so extensive a portion of the cotton textile industry, a uniform attitude upon a movement so comprehensive in its effect. A lack of co-operation between individual units has long been pointed to as one of the major ills of the industry, and the solidarity of attitude evidenced in this movement is indicative of still greater achievement which may come later, with this foundation of solidarity laid.—EDITOR COTTON.

The details of this voluntary adjustment plan about which so much has been heard recently follow: "*Resolved:* That it is recommended to the cotton textile industry that all overtime operation, including the noon hour, be discontinued and that the machinery be operated to not exceed 55 hours per week for the day shift and 50 hours per week for the night shift, with the understanding that this be adopted generally throughout the United States.

"The term machinery shall be taken to mean looms of those mills making cloth and spinning spindles for those mills making yarns. For mills selling both yarn and cloth the limit of hours of operation shall apply to both spindles and looms."

In a report submitted to Secretary of Commerce Robert P. Lamont, Walker D. Hines, chairman of the board, and George A. Sloan, president of the Cotton-Textile Institute, stated that at that time, it was reported that over 18,000,000 spindles had subscribed to the soundness of these recommendations. As this issue goes to press, the 55-50 recommendation has had the approval of mills representing more than 21,000,000 spindles, North and South, or more than 60 per cent of the spindles in place in the United States. It is understood that 90 per cent of the narrow sheetings mills have endorsed the soundness of the plan, and have already indicated that the maximum hours referred to will not be exceeded in their respective plants. Likewise, more than 87 per cent of the wide industrial fabrics mills have taken this step and more than 80 per cent of wide sheetings, print cloths, carded yarn and fine goods mills have endorsed it.

Leaders in the industry have pointed out that there is a general feeling throughout the cotton textile industry that this plan will tend to diminish the present disturbing practice of periods of over-production and over-employment followed by periods of reduced production and reduced employment. For some years the mills have actually been running on a lower total basis of production and employment than is indicated by these schedules, but under conditions which have led to much unnecessary irregularity. Leading mill executives sponsoring the recommendations have expressed the hope that this plan will eliminate many of these irregularities which in the past have been matters of concern to management and employees alike.

Impetus was given the movement at the recent annual meeting of the Cotton Manufacturers' Association of Georgia, when, without dissenting vote, that body adopted the following resolution:

"In order to assure greater uniformity of running time and regularity of employment, the Cotton Manufacturers' Association of Georgia approves the policy which is receiving the attention of the entire industry of the maximum operation for cotton mills of 55 hours day run and 50 hours night run per week, and with no machinery operating at noon, or other overtime, and we recommend to our members the adoption of this policy."

Upon presentation of this resolution, the Association president called upon George A. Sloan, president of the Institute, to express his views on the subject. Mr. Sloan said in part: "Emanating from this very room (at the Biltmore Hotel in Atlanta) in January came the 55-50 recommendation—a new thought and a new hope for the industry. * * * This resolution, in my humble opinion, offers greater hope in getting the mills started up the road to progress than any other movement initiated within the industry during the past three or four years.

"Overproduction and overemployment, followed by inevitable underproduction and curtailed employment, are unquestionably the greatest problems confronting this industry. These problems must be corrected. The industry can never go forward if we are to experience such trying conditions month after month and year after year. Heretofore, whenever a slight improvement in mill conditions was indicated, there has always been a tendency for mills to go to abnormal hours."

Public announcement of the recommendation by 24 prominent representatives of the industry on February 27th was followed promptly by the endorsement of a large number of mills who hailed the movement as the most constructive one that had come out of the industry itself in the past decade. By March 27th endorsements had been indicated by mills representing more than one-half the productive capacity of the industry.

Carding Subjects Discussed at *Clemson College*

THIS IS THE THIRD carding discussion meeting to be reported in these columns within two months, the other reports having appeared in the April issue. At the Clemson College meeting fully reported here, one-process picking, moisture content in cotton, spraying oil on raw cotton, straight and metallic wire card clothing, regulating numbers, etc., stand out as the topics most freely discussed. Opinions of any readers not attending the meeting upon any of these or the other subjects covered, will be welcomed for the columns of the "How Other Men Manage" department.—The Editor.

With probably the largest attendance of any southern discussion meeting, the Carding Division of the Southern Textile Association held its 1930 discussion at Clemson College, S. C., on Friday, March 21st. J. O. Corn, superintendent of the Pacific Mills group at Columbia, S. C., who is vice-president of the Association and chairman of the Carding Division, was in charge of the meeting and conducted the discussion.

After preliminary talks by Secretary Walter C. Taylor, Dr. E. W. Sikes, president of Clemson College, and others, Chairman Corn took the meeting immediately into the practical discussion. The first question on the questionnaire brought up the matter of moisture content in cotton bales, and was as follows: "Does anyone check for moisture content in bales before they are opened up?"

Moisture Content in Bales of Cotton.

I. K. Edwards, of the Arkwright Mills, Spartanburg, was the first to respond, stating that, "while we have not gone into this very extensively, we have checked some bales, and find that it ranges from 6⅛ to 8 per cent; checking just a few bales occasionally." This, he said, was on local, Middling cotton, about 1-inch.

On Western cotton, reported J. J. Lyon, of Orr Cotton Mills, Anderson, "it runs about 8 per cent now, and in the fall when it is green, it goes to about 13 per cent; Strict Low cotton."

"I recently tested some irrigated cotton from Southwest Texas," said Marshall Dilling, superintendent, A. M. Smyre Mfg. Co., Gastonia. "That is supposed to be dry cotton, and it runs over 7 per cent." The variation was about ½ per cent, he added in answer to Mr. Corn. This test "was on a limited number of bales."

"Within one bale," reported Lawton P. Duncan, superintendent, Inman (S. C.) Mills, "I find the moisture runs from 6 to 13 per cent, on six different samples. This one bale was practically wet. A test on 15 bales showed it to run from 6½ to 9 1/3 per cent."

"We check the moisture content each week," said H. V. Murdaugh, of Columbia (S. C.) Mills, "and we find that on Western cotton the moisture runs from 7 to 9 per cent, and on local cotton from 8 to 13 per cent." His local cotton is Middling; Western Strict Low."

The chairman asked if anyone had made any tests between Ordinary and Middling, declaring that on Middling and Strict Low he had found a variation from 9¼ per cent down to 5¾ per cent. "What difference does it make how much moisture content you have in the cotton?" he asked.

David Clark asked if there was any relation between the moisture content and the grade of cotton.

W. H. Gibson, Jr., was called upon as to moisture content, and said, "I think the greatest difference I have noticed we found in Western Middling 1-inch cotton, from 7 to 10 per cent, and then when we got it to the picker room, and took a test of some cotton we had only about 4 per cent."

Referring to Mr. Corn's question as to what difference the moisture makes, Mr. Dilling said that, "we have enough loss now; if we had 13 per cent moisture we would have 5 per cent excessive loss because we are not likely to put out yarn with more than 8 per cent in it. I have recently seen figures from 60 different mills, and they run less than 6 per cent in the yarn, probably right at 5 per cent in the finished product, so all you would have above an average of say 6 per cent would be a net loss to the mill." While speaking, Mr. Dilling answered David Clark's question by saying that, "I am convinced that there is a difference in the grade as regards moisture content. Cotton that is gathered under favorable conditions would not be likely to have so much moisture and would be of a better grade, whereas cotton that has been allowed to stand in the field, etc., would be of a lower grade and have more moisture in it."

W. E. Campbell, Arcade Cotton Mills, Rock Hill, reported that he has about 8 per cent moisture content in his picker room, that he has a combination opening and picker room with 20 10-pound humidifier heads in it.

"Now," said the chairman, "if you had one bale with 13 per cent moisture in it, and put it in a condition where you would have say 60 per cent humidity, or about 6 to 6½ per cent regain, how long will it take that 13 per cent to come back to that 6 per cent? Has anyone made a test on that? I believe we will find that we have been starting off wrong when it comes to regulating numbers, which we are going to take up later. How long will it take that bale with 13 per cent to come down to a room condition of 6 per

cent? I don't know, but I have recently made some tests, taking a sample off of the top of a bale that had stood from Saturday noon until Monday morning, it had a moisture content of 5.51 per cent. Then going down about four inches in the bale, we found a moisture content of eight. Let's go into it a little further and see how the variation in moisture content is affecting us."

The chairman then asked how many had conditioned picker rooms, and only two mills responded affirmatively. He then asked for those who weigh their

J. O. CORN, superintendent, Pacific Mills, Columbia, S. C., chairman of Carding Division, who led the discussion at Clemson College.

finished picker laps to start the regulation of numbers, and how much moisture was found. Mr. Hart, of the Ranlo Mfg. Co., said they found, under their conditions, a fairly constant moisture content of 8 per cent in their finished laps. The chairman then said that, "I find with automatically controlled conditions in the picker room, that we have from 5½ per cent, just as they come off, to 8½ per cent. Now, if we are trying to run with 6½ per cent, and they really run from 5½ to 8½, what are we going to end up with?"

"Uneven numbers," promptly answered Mr. Dilling.

"Uneven numbers is right," agreed the chairman, "and if you get away from it you are doing better than anybody else I know of." The chairman then asked if anyone knew the moisture content at the drawing, and whether it would come down to a standard here. Mr. Lyon and Mr. Duncan pointed out that some of the moisture would be lost at the pickers and other points. W. H. Gibson, Jr., repeated his test which showed 8 to 9 per cent in the cotton, and only 4 per cent in the finished lap. He said they put in humidifiers, but the best they could get back was about 6 per cent.

"Here are some tests which I ran from the bales that varied from 5.75 to 9.25 per cent," said the chairman. "The finished drawing weight was held under a constant relative humidity from the picker room through the drawing. With the exception of one, the variation was within less than 1 per cent, from 6.21 to 6.76 per cent. However, there was one weighing that went up to 8.5 per cent. I don't know why.

"In another batch, the variation was from 5.81 to 5.75 per cent, being held at a constant relative humidity in the room. Another one varied from 6.92 to 5.51; another from 5.53 to 6.24; and another from 6.79 to 5.60.

"That shows me that we are having considerable variation in the moisture content, starting our numbers off. It is something we should study. Let's see if we can find out what is taking place from the time we open it up until we put the last touches on it."

"I might throw some light on that," said W. A. L. Sibley, superintendent, Whitney (S. C.) Manufacturing Co. "Some years ago we made some basic tests along this line, as to how fast the cotton will lose or gain moisture. It doesn't make any difference how much moisture it starts off with, but depends more upon the humidity in the picker room at the time. You may have 13 per cent to start off with, and it is a dry day; by the time the middle of the bale is down in the picker room, the air passing through the screens will change it to within two per cent of the high. On a rainy day, when you may have 80 per cent humidity, that cotton, according to our experience, will not take up the regain, but will lag about two per cent, and it will do that to about 50 per cent. Then when you get down to around 25 or 30 per cent, it lags in the opposite idrection, and the cotton may start off with 6 per cent—30 per cent calling for about 3 or 4—and it will have around 5 per cent. When you go in between those marks your cotton becomes sluggish. If you look at your regain tables you will see it should have a certain percentage of moisture, but you must take care of that lag."

"Well," said the chairman, "say you start off with 9 per cent. Today you might have 40 per cent in the picker room, and tomorrow you might have 70. How much of that 9 per cent is it going to lose with a room condition of 7½ per cent."

"It will go down to around 7," said Mr. Sibley. "If in that picker room you had a regain of 4 per cent, and you started off with 9, it would come down to 5, and

L. P. Duncan.

W. R. Connelly.

it would do it by the air passing through the screens in the pickers." This is not in a regulated picker room, he added.

"With a regulated picker room," said Mr. Corn, "I find that the bales that had 9 per cent to start with, would not come down quite as much."

One Process Picking.

Passing along, the chairman brought up next the question of one-process picking, asking particularly for any changes that are necessary in going onto one-process picking.

Responding to this, Mr. Floyd of Winnsboro stated that he has put in one-process picking, and that while the manufacturers recommended setting the beater to the feed roll to ½-inch, he has found that it doesn't work as well there as at ¼ or 3/16-inch. He runs

Egyptian, Middling and Strict Low, 1⅛- and 1 3/32-inch.

Mr. Campbell, of the Arcade mill, reported next, stating that, "I have found that setting the beater too far away will give too rough a lap, and I tried mine up to ¼-inch before I got the results I wanted." This is on a Kirschner beater, he said; there is no setting on the 24-inch Buckley, but the 2-blade is set ¼-inch. Mr. Corn asked for further experiences.

J. D. Whitmire, overseer of carding, Brandon Mills, Greenville, said that he has had one-process picking for about a couple of years, and that he sets the same as on two processes, ¼-inch on the Kirschner, and 3/16-inch on the finishing beater, on 1-inch cotton. Mr. Campbell said that he had changed from ⅛ to ¼-inch on his Kirschner beater in going to the one-process. Mr. Godfrey reported that they also had changed the setting of the beaters in going to one-process; that the manufacturers left them set at ½-inch, and "we found we got better results at ¼-inch. Before we put in the one-process we were running them at ⅛-inch."

W. P. Leister.

"I have one-process picking," said W. D. Stillwell, overseer of carding, Aragon-Baldwin Cotton Mills, Whitmire, S. C., "and I am setting the Kirschner beaters at ¼-inch. The blade beaters are set ⅜-inch." He said his former setting was ¼ to 1/16-inch.

"Theoretically, why should there be any change in the settings?" asked Mr. Corn.

"The reason I changed mine was to get a better breaking strength," replied one of the men. "If it is set too close on the second beater it will injure the breaking strength. I have tried from 1/16 to ½-inch, but I have found that ¼-inch on the second beater will give the best breaking strength." Another man said he had found it produced more even numbers.

A member asked which gives the best results, a Kirschner or a blade beater, and Mr. Floyd and others answered in favor of the Kirschner.

The chairman asked if any other changes were necessary in putting in one-process pickers. "I have had to raise the beater speed from 900 to 1,370 r.p.m.," replied Mr. Whitmire, adding, however, that he retained about the same number of beats per inch. Mr. Godfrey said he was able to run with a lower fan speed, putting holes in the doors on the back.

"Do you find that different weights of lap require different beater settings?" was asked. Mr. Godfrey replied that he had not changed weights, but that a change in the speed might be necessary in changing the weight of the lap.

John A. McFall, superintendent, Ranlo Mfg. Co., asked concerning the uniformity of lap weight, yard for yard, on one-process.

"At our place we made a lot of tests on this," said W. D. Stilwell, "rolling it off and hanging it up to the light, and I find that it is a lot evener than the old picking, yard by yard. I have weighed a lap every week, yard for yard, and it is really surprising. I don't know how much the variation is, but it is very little."

"Then you do think it is better?" asked Mr. Corn.

"Absolutely," replied Mr. Stilwell.

R. E. Harrington, of Winnsboro Mills, stated they had found that on the one-process there is a variation of about one ounce per yard, and that on the two-process it is about the same; "I cannot say that it is any evener." Mr. Floyd explained here that the laps run on what double-process is left were partly set-backs from the one-process at this plant.

"I find the one-process makes a more even lap than either two or three," reported Mr. Whitmire. "From the percentage of setbacks, mine dropped from 5½ per cent to one per cent, allowing one-half pound variation each way." Mr. Godfrey and Mr. Campbell both reported a lower percentage of set-backs or rejections with the one-process.

The chairman next asked for the production of a one-process picker. Mr. Dilling reported that he runs 230 pounds an hour; Mr. Campbell, 420 pounds.

J. D. Whitmire.

With regard to the low percentage of set-backs reported, Mr. Harrington asked these gentlemen how their hoppers are fed. One man said he has a condenser for two machines. Mr. Harrington explained that they have 11 one-process machines, fed by three condensers.

David Clark asked about the variation in the length of laps from the one-process. Mr. Harrington said it will vary about three feet in a 50-yard lap, and Mr. Whitmire said he had not found over 12 inches variation in a lap of 54 yards.

"Speaking of variation in the length of the lap," said Mr. Dilling, "there has recently been invented an attachment to release the friction on a picker instantly it knocks off. That helps if the picker hand doesn't get there to release it, because if that makes a few revolutions under pressure, the last few layers will stretch considerably. This will prevent a lot of that stretching, and it also helps the picker hand; the first thing he has to do is to pull out the pin." With the permission of the chairman, Mr. Dilling stated that this is being made by J. D. Long, of Albemarle, N. C. Mr. Dilling said it is "like the one-process picker, we ought to be criticized for not thinking of it a long time ago."

The chairman next wanted to know, in installing one-process picking, how many machines of the former type were thrown out, and how many of the new type put into replace them. Mr. Stilwell said he had replaced eight machines with five; Mr. Whitmire substituted five for ten; and Mr. Dilling had five which were replaced with three one-process machines. Nobody present reported putting in the same number of one-process machines as they were running formerly.

"On the one-process, does anyone have any trouble keeping an even amount of cotton in the intermediate hopper?" asked Mr. Floyd.

Not unless there is trouble behind, said Mr. Whitmire, with the human element.

Mr. Underwood said, "we have two types of one-process, one made by one manufacturer and one by another. On one of these machines we do not have trouble keeping the middle hopper full, and with the other we do have trouble." Mr. Floyd said the trouble he had in mind was with a door that regulates the cotton, with an arm or attachment on it. He said in changing from one kind to another, do you move the weight on this attachment. Several men replying said they make no change in going from one kind of cotton to another.

Mr. Harrington asked what is the maximum production per hour for a one-process picker. The only figure given was 457 pounds per hour.

"Do any of you have any trouble with the back clutches when starting the machine up after doffing?" asked Mr. Campbell.

"We did, and put a spring on to pull the clutch all the way out," said Mr. Whitmire.

"My trouble was on going in," said Mr. Campbell, "the control doesn't work fast enough to keep them from chattering."

"To answer my own question," he said, "I had considerable trouble with it. The manufacturer said never to run the feed pulley between the front and back under two inches difference, and I changed to four inches difference in the feed pulley and eliminated the trouble." He said the speed of his beater shaft is 1,000 rp.m.

J. C. Cudd.

A member asked as to whether the percentage of motes is increased on the one process. One man reported that his percentage is 2.83. Another man wanted to know if anyone had followed the cotton through to the yarn, and if so, whether it has less variation.

One man replied he has less variation; another said he could tell no difference, so long as the laps are made right.

"In one mill I have found no improvement in uniformity," said Mr. Dilling, "and in another mill I find a considerable improvement, but in the latter case we needed it more."

W. P. Leister, superintendent, Victor-Monaghan Co., Walhalla, S. C., wanted to know if those who had one-process picking would put it in if they were starting all over again, and, if so, why. No one responding said he wouldn't put in one-process; one of the men said that he would, stating that he gets just as good or better results, with reduced cost.

Here W. H. Gibson propounded a question that had been submitted to him. He said a man was carding 90 pounds a day, and wanted to increase his production because he was short on cards, and what he wanted to know was whether, if he increased his cleaning in the opening and picking, he could increase his card production and still get as good a yarn. His yarn was 24s. L. P. Duncan replied that "if he cleans his cotton good, he can go to 110 pounds on the card without hurting himself."

The chairman here pointed out that within recent years practically every mill had increased the opening and cleaning equipment, and asked if with this additional equipment, mills generally had speeded up their cards.

"The purpose of all this cleaning equipment was to run a cheaper cotton, by putting in the cleaning system," replied a member. "They run a cheaper grade of cotton and get as good results. If you didn't put in a cheaper grade of cotton you could increase your carding 10 or 20 pounds a day without hurting anything."

"Why is it you get a more even yarn on the one-process picker?" asked E. G. Waits, overseer of carding, Newberry Cotton Mills, Newberry, S. C.

"I attribute it to more uniformity in the yard for yard weight of the lap," replied Mr. Dilling.

"We get a more even lap, and get away from the human side of it," said Mr. Whitmire, referring to the lapping of the laps on the aprons on the back, as a source of unevenness. He said, "on the two process where you have too many full laps on the aprons the lap will get light; and on the one-process where you keep the same amount of cotton in the hopper you will get the same amount of cotton per yard in the lap."

J. A. McFall.

Mr. Harrington asked if anyone had experimented measuring the length of laps from different staple cotton, or on fair days and rany days. No one present responded, and Mr. Harrington said, "we have measured them both ways, and I think you would find a great deal of difference in the total length off of the same machine."

Reverting to the question on card production, a member reported that he had one card making 4 turns, and another making 9 turns, and testing the yarns in the spinnings, found them to break about the same.

Straight Wire Clothing on Cards.

As the next question for discussion, the chairman brought up the question of straight wire clothing on cards. "We have fourteen cards out of 120 on straight wire," reported W. D. Stilwell, "and I believe everybody in the mill who looks at these cards says it is the best carding we have. I have not made any real tests, but absolutely I think it is the best carding we have. We grind once a month and strip the cylinder twice a month. The doffer we strip twice a day and twice a night. We have had the straight wire about eight months. We run the cards night and day, on local cotton, and card 135 pounds in ten hours."

E. G. Waits reported next. "I have eight cards on the straight wire. One of them has run for 14 months, doing about 19 pounds an hour, on Middling cotton. We strip the cylinder once a week, every 55 hours. It will go for 220 hours, but we find it makes better work to strip every week. We barely grind the cylinder, just touching it, when we go around. If you grind it like you do the knee wire you will have trouble with the fibers sloughing over and going to the doffers. We tried letting one go for seven months without grinding, but the web began to look rough. After

grinding it we re-set the card and it improved the sliver considerably. The advantages we find are that we get an evener web because of not stripping so often, and the web after stripping will come back to its normal weight in about three minutes, whereas it takes about 15 minutes on the knee wire. The labor is cut down in stripping. Those are about the advantages that we find."

"We have three cards on straight wire, that have been running about six months," reported William R. Connelly, Pacific Mills, Columbia, "on 1-inch, Middling,

W. D. Stilwell.

G. M. Bayne.

Strict Low, Western cotton. We grind every other card, once a month. The work is not any better, according to our judgment. The toppings are the same and the screenings are about the same, and we save 5¾ pounds a week on stripping." Mr. Connelly then asked for the experiences of others as to straightening up rough places on the fillet. Both he and Mr. Stilwell reported that it is practically impossible to repair "bunged-up" fillet on the straight wire.

A member asked if the settings are the same on the straight wire, and several indicated the same settings, although one man said, "I find you can set a little closer with the straight wire."

"We have about 40 cards on straight wire, some of them for 14 months," reported Mr. Harrington. "We card about 14 pounds an hour, on 15/16 to 1 1/16-inch Western, local and Egyptian. The strength is just as good and the uniformity is just as good, and we get about ¾ per cent less waste. We grind every 90 days and strip every day."

G. M. Bayne, American Spinning Co., Greenville, who had reported on experience with straight wire at the division's meeting in Augusta in 1929, was called upon by Mr. Corn. He said that, "I suspect our mill was the first in this section to try straight wire. We started in August, 1928, and have 128 cards in all. We started 18 months ago, using straight wire as we had to replace, and today we have on 11. That gives us 8 months night and day that we have operated part of them on straight wire, and I cannot see that our carding is any better than with the knee wire, but I do think it is as good. We strip our regular wire every three hours, and strip the straight wire once a week, night and day, running 110 hours. We grind the knee wire once a month and the straight wire once every two months. We cannot tell that our breaking strength is better or worse. We have kept the stock separate and run it through to find out that it did, and we cannot tell any difference."

"Is there any improvement in the cleanliness of the yarn or the cloth in using straight wire?" inquired W. P. Leister.

"We ran a line of our machinery on that, and in the cloth we did not see any improvement," answered E. G. Waits. "On our spinning, however, we found about 50 per cent less end breakage, and on the high speed warpers about 300 per cent less end breakage, with the straight wire, against the knee wire, but in the goods we couldn't see any difference." Mr. Waits added that these tests were run under the same conditions all the way through, on the same day, under the same atmospheric conditions, etc. The end breakage test was conducted for one day, on 13½s. He said he had no information as to loom end breakage.

E. F. Brown, of Clifton, S. C., asked whether the straight wire is easier or harder to strip than the knee wire. "We find it takes about twice as long to strip the straight wire," responded Mr. Bayne. Mr. Floyd brought out that if you strip it every 24 hours it is necessary to put the roll back on. Mr. Waits suggested leaving the doffer in motion while stripping the straight wire.

Mr. Connelly brought out that he strips once a week of 110 hours, on cylinder and doffer, putting the roll on the cylinder two or three times, "but on the doffers we never do get all of it out."

In response to questions here, it developed that most of the men discussing this subject do not have the straight wire on the doffer; and that there is a wide variation in the frequency of stripping the doffers, ranging from three times a day to once a week. Mr. Duncan said when he lets his go a week, the web looks a lot neppier at the end of that time.

Robert Huskey, overseer of carding, Whitney Mfg. Co., asked as to the difference in power required just before and just after stripping. Mr. Floyd said he had seen a test on 140 cards, 10 cards to the motor, and while he did not know the electrical terms, there was an indicated saving of $1,100 a year in power,

Robert Huskey.

I. K. Edwards.

the tests being made running for ten hours, immediately after stripping and immediately before.

Metallic Clothing on Cards.

The chairman brought up next the question of metallic card clothing, and several present indicated they were using it. Mr. Harrington said they have one card so clothed, and have made two tests on breaking strength, one showing the regular wire better, the other in favor of the straight wire. He said there is a waste saving of 1½ per cent; that they do not strip

or grind the card.

Mr. Duncan asked where the waste that is saved goes. Mr. Harrington said there might be some doubt as to where it goes, but that some of it must be retained. Mr. Duncan asked about the waste saving on straight wire also, and Mr. Corn explained that there is a saving because of the smaller number of times that the card is stripped.

Reverting to the metallic clothing, Mr. Dilling reported that, "I have one card on the metallic clothing, and for some time the yarn did not look as good as it did off of the knee wire, but after running it for three months we found that it does look as good, and in making breaking tests on 24 sizings each for a period of about four weeks, we find that the average increase in breaking strength is about five per cent. We have about 1½ per cent less waste from this card, but I do not think we save all of it; I think a good part of it comes out at the combers and other places, but I think we save some part of it, and the long fibers that we get out of the cylinder strips are saved. The appearance of the yarn at the present time is just as good, and we save the strippings, and it looks now as if there is some advantage."

J. L. Pickelsimer.

Walter B. Pratt at this point declared that when a mill installs straight or metallic clothing on only one card that has been carefully gone over, tests on it should not be compared with the running of cards in the room that have been running over different periods of time, and which are in varying conditions. "You can take any card, and put on new clothing, and set it up carefully, and get an increase in strength, comparing it with the room as a whole."

Mr. Waits reported a test taking the sliver to the same slubber, using the same machines all the way through, with the result that the yarn from the metallic clothing broke about 5 per cent weaker than that carded with knee wire on the card.

A member asked if anyone had trouble with the metallic clothing swelling or puckering up on the cylinder, and Mr. Floyd said it is liable to do this unless it is put on with an increased tension.

Licker-in Speeds.

Chairman Corn next asked for experiences in increasing or decreasing licker-in speeds, and the effect on breaking strength. Mr. Murdaugh said he had gone to 450 r.p.m., with a cylinder speed of 170 r.p.m., speeding the doffer accordingly. R. E. Lindsay reported that on staple cotton some mills use a reduction gear on the licker-in. Mr. Corn stated that he had in mind decreasing the licker speed to say 300 or 325 r.p.m., or increasing it to say 475 or 500 r.p.m., with regular speed on the cylinder, and 1-inch or similar cotton. No one reported on this, and the chairman suggested that some of the members experiment along this line.

The chairman next asked for different methods of stripping cards. Mr. Stilwell said he uses the brush method, while most of the others reported either the Saco-Lowell or Cook's vacuum method. One man asked, "where you have the vacuum stripper, do you use the roller at all?" and Mr. Dilling and others reported that they use the roll at grinding time; Mr. Duncan and others saying once a week. It was pointed out that even with the vacuum stripper it is necessary to use the roll occasionally. W. W. Cobb, of Cateechee, reported difficulty with damaged wire in using a roller stripper, until he had located his trouble. This practically concluded the morning discussion, and the meeting was adjourned for luncheon. Prior to lunch, the delegates witnessed a special drill by cadets of the school, and luncheon was held in the mess hall along with the 1200 or 1300 students.

Following the luncheon, the discussion was resumed at an afternoon session. Before the discussion was started, the chairman called upon W. H. Barre, of the Bureau of Agricultural Economics of the Department of Agriculture for a brief discussion of the work being done at Clemson College and other places, by the Bureau, in connection with cotton staple and research on cotton.

W. W. Cobb.

Dr. Barre pointed out that one phase of the Bureau's work was to determine the factors that influenced the quality of cotton. He pointed out that during recent years the quality of American grown cotton has deteriorated, that the majority of America's production is of ⅞-inch or less. "Taking the whole crop of 1928," he said, "we produced nearly six million bales of ⅞-inch; over two million bales less than ⅞-inch; a little over three million bales of 15/16-inch and less than two million bales of 1-inch cotton and smaller amounts of the longer length.

"The consumption of American cotton is quite largely of 15/16 and 1-inch cotton, and we barely produce enough cotton in the United States of those lengths to meet the American demand." He stated that of the South Carolina crop, nearly 40 per cent is 15/16; in North Carolina, about 21 per cent; in Georgia there is only about 20 per cent of this length or better; while in Alabama there is less than 10 per cent. He spoke of the efforts being made, through five-acre contests, etc., for improving the length of cotton.

Dr. Barre emphasized to the mill men that the farmers will not continue to grow better lengths of staple unless they themselves receive the premiums that the mills pay for the better cotton. "Those of you who know how the country markets are operated," he said, "will know that the farmers themselves are not getting the premiums that the mills are paying for the better lengths of cotton, and there is where cooperation is going to have to be maintained and developed between the producer and the consumer."

Dr. Barre then discussed the question of uniformity of length of fibers in cotton, explaining the work being done of sorting the fibers to show the percent-

(*Continued on page* 819.)

CURRENT TOPICS

Talk of the Month

TWO CONTRASTING SITUATIONS have been concurrently set before followers of cotton textile matters prominently within a month. The mill merger movement, a growing factor in the American cotton industry for more than three years, has become active in New England this spring. Strangely enough, advices from England picture a situation in Lancashire which supports the idea that the American industry is on the right road when it pursues the consolidation way. Whether this is the means of egress from world-wide depression in the cotton industry remains to be seen, but at least the comment from the very seat of the industry is worthy of contemplation.

Lancashire Commends Mergers in United States

In the House of Commons recently the Lancashire cotton towns were portrayed as suffering distress from the worst depression since our Civil War. It was asserted that 100,000 men and women—or one of four in the mills—had been dropped from the payrolls within three months. One reason cited was that other countries were leading Great Britain in the adoption of automatic machinery. Another factor was Japanese competition in the Far East and, pertinent to the American situation, it was set forth that 40 per cent of the production of Japan is in the hands of four firms, whereas Lancashire has 1,800 weaving and spinning firms.

It is significant that efforts are being made to reorganize the British industry to meet the Japanese competition, however, and further confirmatory of the wisdom of the tendency in this country. The cotton industry probably could not stand aloof from the broad economic change whereby great units are the order of the day in all lines of production, even if the smaller mill unit under other circumstances were considered the more practical. But things being as they are, there appears to be a growing receptivity to the idea of consolidating interests, provided the stockholders of the individual units get a square deal in the procedure toward amalgamation.

The Progress of Mergers

Something of the progress of the movement, North and South, is indicated in an analysis of various groupings in a recent issue of the Boston News Bureau, which carries the current phase of merger activities back to November, 1926, when the Pepperell Mfg. Co. absorbed the Massachusetts Cotton Mills. It alludes to the consolidation during the summer of 1928 of ten mills into the Cannon Mills; a little later the beginning of negotiations which led to a well-rounded combination in United Merchants & Manufacturers, Inc.; in January, 1929, the Associated Textile Companies; now the Berkshire Fine Spinning Associates and the Bancamerica-Blair Corporation project.

A Correction.

IN the article, "A Discussion of Conditions in the English Cotton Industry," by William King, in the February issue of COTTON, there appeared the following statement:

> "Another concern, Lord Bros., of Todmorden, a subsidiary of Brooks and Doxey, Manchester, Lancashire, has been partially closed owing to lack of orders, and many men are consequently unemployed."

Brooks & Doxey (1920) Limited, Manchester, the parent organization, have, since the publication of this article, drawn our attention to the fact that their branch works at Todmorden were closed in pursuance of a plan adopted by them five years ago to centralize the whole of their machinery manufacture, and not through lack of orders. They state that the demand for mixing, blowing room and waste machinery formerly manufactured at their Todmorden works is good, notwithstanding the present depression of the cotton industry in that country.

We are glad to publish this correction of the statement which appeared in the February article.—The Editor.

These various groups involve spindleage running from 300,000 to 637,000, with the Berkshire Fine Spinning Associates leading. By the time this is published, or at some future date, the Berkshire group may have reached 1,000,000 spindles as at the time of writing negotiations for further consolidation were pending. The Bancamerica-Blair project—in which Jerome H. Newman has been the prominent operator—has been definitely established. Virtually in the merger field, incidentally, are classed four Maine mills secured by the Insull public utility interests and put under a centralized management.

There is plenty of opportunity for strong manufacturing groups in the textile industry, even if modern cotton mills have a record of efficiency unequalled in any other industry, as contended in a brochure from the Association of Cotton Textile Merchants of New York by Leavelle McCampbell, vice-president of that body. "From a mechanical standpoint," he asserts, "a poorly run cotton mill is probably more efficient than a well run automobile factory." He points out the intricacies of cotton manufacture, which are carried out to extraordinary perfection, and states the obvious truth that "it is one thing to introduce improved methods into an industry thirty years old and quite another to attain the same objective in an industry as many centuries old."

Such a pamphlet emphasizes the point that the problems of the industry have turned to regulation of supply to demand and to distribution. In these two, and kindred, problems, the industry is hardly worse off than most other lines of production. Walker D. Hines, chairman of the board of the Cotton Textile Institute, and George A. Sloan, its president, in their recent report to Secretary Lamont of the United States

Department of Commerce on the efforts of the mill executives toward more uniform production indicated clearly that the cotton industry is fully abreast of the general movement of industries to level the peaks and valleys of manufacturing and employment.

The Program of 55-50-Hour Week

These men reported that mill executives in New England and southern states representing 18,494,396 spindles and 422,901 looms had subscribed to recommendations looking to greater uniformity of mill operation and consequently more regular employment of operatives. (Figures quoted apply to date of report. For later information, see page ——.—Editor.) The prevalence throughout American industry of the problem of alternate periods of over-production and over-employment on the one hand and slack times for plants and workers on the other has led a group of leading New England business men to begin a nation-wide study of ways and means of stabilizing output. This group proposes to spread the knowledge gained, in the effort to alleviate present great losses.

Manifestly, the smaller the number of controlling factors in an industry, the simpler becomes such a matter as the regulation of production upon a reasonable basis. Clearly, too, a group of more powerful units can cope better than the large number of small factors with the problems of distribution, especially when they come into contact with the problems of close buying and combination interests on the buying end. It is evident that manufacturers must bring some sort of pressure to bear upon purchasers to create fair conditions of distribution. Perhaps the merger movement will facilitate progress in this direction.

This really is fundamentally a co-operative problem between producer and distributor, in serving the consumer, rather than an economic tug-of-war. That is, as a matter of common sense, it should be so considered. Economists from the first have expounded the truth that all production is for consumption and, in a day when output is so potentially great as now, the handlers from the factory to the consumer should co-operate toward the end which is their common one: moving as many goods as they can profitably to the ultimate buyer.

Somewhere along the line of distribution, the demand of the ultimate buyer must be provided against in advance. A just and equitable sharing of the burden has never been reached. Market reports have talked sometimes of sellers holding the whip hand and again of buyers gaining the advantage. Yet both are working for the same purpose of distributing one line of goods at a profit. If the mills create a condition wherein they convince buyers that plants will not be run overtime in response to an artificially crowded demand because these buyers figure that they can purchase at a moment's notice, one force for correction of a notorious evil will be put into effect.

Meantime, it is a hopeful sign that there is a tendency to treat problems of such nature rather as matters for co-operative effort than as points for contention. At least one example of this kind in textiles is at hand, in a conference planned between one branch of the Wool Institute and representatives of the cloak, suit and skirt manufacturers' association. The matter of buying practice is not in the list of items for discussion, but the conference suggests other ideas.

On the matter of providing for prospective demand, the manufacturer will suffer mutually with the retailer if the latter becomes overstocked with unmarketable goods. A poor retail distribution one season reacts on buying for the next and induces price pressure. On the other hand, the buyers from the manufacturer should give consideration to the limitations of production and order reasonably in advance so that plant operations can be properly governed. For it must always be borne in mind that in the cycle from producer to consumer, we come back to the producer. The retailer's buyer is largely that very operative who works in the mill and his steady employment is the foundation of the widest distribution.

What the Southern Mills are Doing

A. M. Johnson Rayon Mills, Inc., Burlington, N. C., are planning doubling the capacity of their spinning department.

Work on the new addition to the Warlick Mfg. Co., Newton, N. C., is now well under way. It is reported that additional weaving equipment will be installed.

The Shelby (N. C.) Cotton Mills recently installed one unit of Barber Colman automatic spooling and high speed warping.

The Wade Mfg. Co., Wadesboro, N. C., recently installed new raw stock bleaching equipment. In this equipment was included three closed kiers, installed by the Columbus Truck & Supply Co., of Columbus, Ga.

Gaston County Dyeing Machine Co. recently obtained contract for installing 4 beam dyeing machines, complete with 8 beam dryers, and 160 dye beams at the Southern Dyeing Co., Burlington, N. C. This company also obtained contract for the installation of two additional dryers for the dyehouse of the Cross Cotton Mills, Marion, N. C.

Spencer Corporation, of Spindale, N. C., recently installed Bahnson humidifiers in their Cleghorn Mills. The humidifiers are made by Bahnson Co., Winston-Salem, N. C.

Katterman & Mitchell Co., Paterson, N. J., recently purchased the Lola Gingham Mills, Stanley, N. C., for approximately $75,000. In addition to three winders and two warpers recently purchased, they have placed an order for a Sipp-Eastwood winder.

Ruby Cotton Mills, Gastonia, N. C., have given Herbert Hinckley, Inc., of Charlotte, N. C., representative of the Borne Scrymser Co., contract for installing complete set of Breton Minerol Process equipment.

It is stated that Best Silk Mfg. Co., Pleasantville, N. C., will rebuild the portion of their mill recently destroyed by fire. The loss, including equipment, was estimated to be around $100,000.

Harry Dotts, Jr. and Frank Strauss, formerly in charge of the Howard Silk Throwing Co., Mebane, N. C., have leased this company and will operate under the name of F & M. Dye Works.

Carolina Cotton & Woolen Mills, Spray, N. C., recently purchased 12 new twisters from Fales & Jenks Machine Co.

Additional roving machinery has been purchased by the Amazon Cotton Mills, Thomasville, N. C., from Woonsocket Machine & Press Co.

Blair Mills, Belton, S. C., manufacturers of bath robes, smoking jackets and terry cloth, are installing 16 additional sewing machines. This gives them a total of 28.

Graniteville Mfg. Co., Graniteville, S. C., Vaucluse division, have secured equipment from Borne Scrymser Co., for spraying oil on cotton.

Children like to wear durene hosiery—because it's so comfortable through hours of strenuous play. Mothers prefer it, because durene keeps its "newness" through long service and many launderings.

Soft, lustrous durene is being made up in the very styles that women want—shorts, brassieres, combinations and union suits in pastel colors, with an irresistible sales appeal.

Fine durene welts make these tops keep their shape. The durene feet are comfortable and longer-wearing.

There's a Waiting Market for **Durene;** Will YOU Meet the Demand?

THE name durene, applied to the finest mercerized cottons it is possible to produce, is a definite, tangible source of extra profits for you . . . This name stands for *highest quality* specially-processed cottons, in the buying consciousness of merchants and purchasers of knit hosiery and underwear. It is continuously impressed upon the public by widespread national advertising, sales promotion activities, and educational work among the homemakers who purchase more than 80% of the entire hosiery and underwear supply.

The name durene enables you to go to the merchant with a distinguishing mark of quality, for which there is a waiting market. The merchant can display your durene garments *by known name*, and make quicker, easier, larger sales. Customers can be sure of getting this same quality—*your* quality—every time, by asking for hosiery and underwear of durene . . . Labeling or stamping your products with the durene name means that they move faster, bring back repeat orders, and give you the prestige and profits of nationally advertised goods.

Write for information about the Durene Special Licensing Plan, which gives you the benefits of distribution under the durene name, and protects your interests in the manufacture and sale of durene garments. Look for durene advertising in The Saturday Evening Post, Vogue, and The Butterick Quarterly.

Durene Association of America
250 Fifth Avenue, N. Y. City

MEMBERS

ABERFOYLE MANUFACTURING CO.
Philadelphia, Pa.
AMERICAN YARN AND PROCESSING CO.
Mount Holly, N. C.
DIXIE MERCERIZING COMPANY
Chattanooga, Tenn.
HAMPTON COMPANY
Easthampton, Mass.
CLARENCE L. MEYERS, INC.
Philadelphia, Pa.
SPINNERS PROCESSING CO.
Spindale, N. C.
STANDARD-COOSA-THATCHER COMPANY
Philadelphia, Pa.

Durene *Quality begins with the yarn*

Durene hosiery for men is good-looking, comfortable and unusually durable. It has the lustre of quality.

Cowikee Mills, Eufaula, Ala., have awarded contract to Walker Electric & Plumbing Co., Columbus, Ga., for electrical work in the new department. Plans are under way for enlargement of yarn mill.

An addition of 5,000 spindles is being planned by the Geneva (Ala.) Cotton Mills. C. C. Cobb is superintendent and manager of the mill.

It is announced that the Sauquoit Spinning Co., Gadsden, Ala., recently purchased by the Standard-Coosa-Thatcher Co., will soon begin operations. It is also stated that the new owners are planning on adding $75,000 worth of new machinery to increase the output.

Sibley Mfg. Co., Augusta, Ga., are installing the Breton Minerol process of oil spraying equipment for lubricating both white and colored cotton.

The main part of the Beaver Cotton Mills, Elberton, Ga., was recently burned down, and the machinery and supplies were completely destroyed. The walls, which are brick, and the engine and dynamo rooms were not damaged, however. The mill has not been in operation for sometime, but plans were being made to convert the property to other uses previous to the fire.

Griffin (Ga.) Mills, recently purchased by the Hightower interests, are installing the 540 40-inch shuttle changing looms, which they purchased from Stafford Co.

According to recent announcement, $118,000 is to be spent for improvements by the Gainesville, (Ga.) Cotton Mills. The improvements include a new gymnasium, clinic and additions to store and warehouse, also a new church.

D. C. Collier, president of the Southern Mfg. Co., Athens, Ga., recently re-purchased the Harris Cotton Mills, Eatonton, Ga. These mills were formerly the Eatonton (Ga.) Cotton Mills, which Mr. Collier sold to Mr. Harris some time ago.

An addition costing several thousand dollars is being built by the Juliette (Ga.) Milling Co. to their cotton mill. Extensive machinery will be installed and the capacity of the plant will be greatly increased.

Merrow Machine Co., of Hartford, Conn., are installing 26 over-edging machines at the Oakleaf Mills, Lagrange, Ga., which manufacture wiping cloths.

Stafford Company will install additional looms for weaving chenille yarns at the Valway Rug Mills, Lagrange, Ga.

It has been rumored that the Atlantic Mfg. Co., Macon, Ga., will improve their present building for the establishment of a rayon plant.

The interests of the Jewell Textile Mill, Jewell, Ga., were recently sold to B. T. Comer, a textile mill promoter residing in Atlanta. He plans to rebuild the mill which was burned three years ago. It is understood that capitalists in Warren and Hancock counties plan to invest liberally in the new mill.

Fitzgerald (Ga.) Cotton Mills are re-starting their bedspread factory. A. Ferguson Macintyre is general manager.

Monroe (Ga.) Cotton Mills, manufacturers of sheetings, sateens and cotton jeans, are replacing spoolers and slow speed warpers with a complete system of Foster high speed winders, magazine cone creels and Saco-Lowell high speed warping.

Oil spraying equipment has been installed at the Pelham (S. C.) Mills by Borne Scrymser Co.

The third unit of machinery is being installed at the Orange plant of American Silk Mills, Gordonsville, Va. The number of employees will be increased from 173 to 200.

Brucetown Woolen Mills, Inc., Winchester, Va., recently destroyed by fire, will be rebuilt in Clearbrook, Va. The new mill will be much larger and will possess the most modern of equipment.

It has been reported that the Certified Laboratories, Inc., will erect a plant in Marble Falls, Texas, for the manufacture of absorbent cotton and gauze. It is understood that $250,000 worth of machinery has already been ordered. The building owned by Marble Falls Textile Co., has been taken over.

Business men of Harlingen, Texas, are organizing a new company to construct a cotton mill in that city. A $50,000 building, erected for a cotton mill a few years ago but abandoned, will be taken over when the charter is received.

Washington Mills Co., Frieze, Va., recently installed two Bahnson conditioning rooms in their plant.

Carolina Specialty Co., of Charlotte, N. C., will install 14 double deck Sipp Eastwood winders in the Tubize Artificial Silk Co. of America plant, at Hopewell, Va.

The Cannon Mills have centralized all of their dyeing, as well as all job dyeing done by this company, at their No. 6 plant located at Concord, N. C. A dyestuffs and dyeing laboratory has been opened at the No. 6 plant in charge of G. E. Faulkenberry, a graduate of the class of '29 of Clemson College (S. C.) Textile School.

Cotton Comment by H. & B. Beer

New Orleans, April 12th, 1930.

UNTIL EARLY APRIL the trend of the cotton market remained upward, especially for old crop deliveries. Subsequently the market reacted somewhat owing to the desire to realize, influenced to some extent by more favorable weather inland and the uncertainty attending the May-July situation. Nevertheless, compared with about one month ago, values show an important advance for old crop months, while new crop deliveries are only slightly higher. A feature of results of the month's trading is that large premiums on old crops over new crop values were established, whereas one month ago old crop months were quoted at a moderate discount.

The strength of near positions was attributed to short covering, transferring of hedges to distant options, and to trade and speculative buying, influenced by the fear that the co-operatives may demand a very large quantity of cotton on May and July contracts. The co-operative are supposed to be heavily long of May and July contracts. The first May notice day will be April 25th.

If the co-operatives receive a very large quantity of cotton on May contracts, shorts may find it difficult to build up another large stock of certificated cotton to protect the short interest that may exist in July when that position matures. This is a new departure in the cotton contract business, and since the co-operatives have government financial support, much interest is centered in as to what the outcome will be. Meanwhile other market influences seem to be deprived of their former usual full effect on values, which deters selling to any extent by the bearish inclined, and makes opinions almost valueless for the present.

CENSUS REPORT

	This Season	Last Season
Final ginnings, runing bales, subject to revision	14,544,584	14,296,549
Equivalent to, in 500 lb. gross weight bales	14,821,499	14,477,874

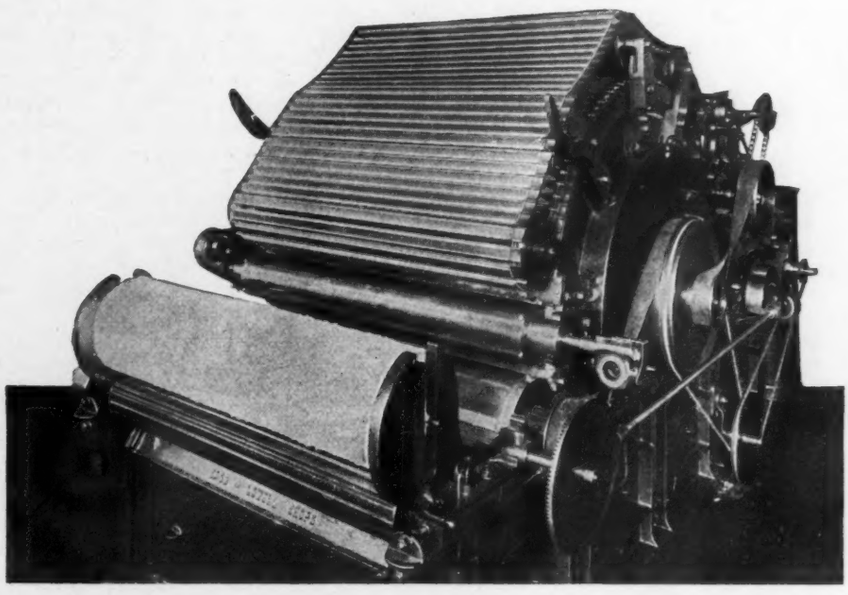
Last December the government's estimate was for a yield of 14,919,000 bales of 500 pounds gross weight.

THE ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK MARCH STATISTICS.

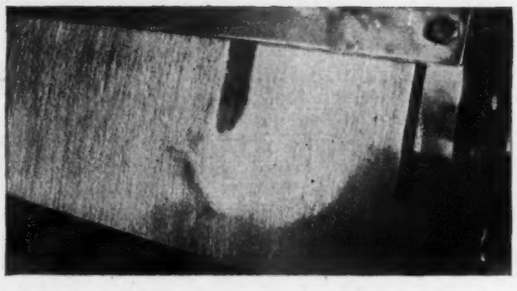
Yards—	March 1930 4 Weeks	February 1930 4 Weeks	March 1929 4 Weeks
Production	261,403,000	266,849,000	297,994,000
Sales	292,249,000	243,861,000	358,333,000
Shipments	265,675,000	274,543,000	325,633,000
Stocks	440,853,000	445,125,000	345,311,000
Unfilled Orders	387,463,000	360,889,000	504,876,000

Sales for the month were 111.8 per cent of production, and shipments were 101.6 per cent of production. Stocks on hand at the end of March decreased 1 per cent from those at beginning of month, while unfilled orders increased 7.4 per cent.

Compared with last season, and converting Indian cotton into 500 pound bales, Garside recently estimated the world's consumption of American, exclusive of linters, for the first half of the season at 7,101,000 bales against 7,619,000, of Indian 2,536,000 against 2,148,000, or a total of 9,637,000 against 9,767,000, and estimated the world's stock of American, exclusive of linters, on January 31st at 11,969,000



SACO-LOWELL CONTINUOUS *Card* STRIPPER



ELIMINATES STRIPPING AND GIVES MORE AND BETTER PRODUCTION

The above photograph shows the cylinder clothing after ten weeks of continuous operation with the Saco-Lowell Continuous Stripper. In the center the stock has been lifted with the point of a knife. The cotton comes off in a fine sheet and the wire underneath is as clean as immediately after the costly and inefficient hand-stripping process.

THIS new Saco-Lowell Stripper, driven from the main cylinder, keeps the cotton continually above the knee of the clothing wire. The card is always working at maximum efficiency. The doffer need be stripped only about twice a week and then without stopping the card or losing any production.

The advantages may be summed up as follows:

1. Saving of time, by elimination of stripping, equivalent at least to the production of one card in forty to fifty.
2. No cylinder strips made.
3. Even sliver all the time.
4. Cylinder wire clean all the time, resulting in:—
5. Saving of from one to two percent of the stock, represented by long fibres formerly carded out.

We have installed this Continuous Stripper in a number of mills and have received very satisfactory reports of the results obtained. May we give you detailed facts and figures about the labor savings made and the quality increases obtained? Write today for details.

SACO-LOWELL

MANUFACTURERS OF TEXTILE MACHINERY

147 MILK STREET, BOSTON, MASS.

CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

bales against 11,865,000 and of Indian 4,754,000 against 5,113,000, or a total of 16,723,000 against 16,978,000.

Private acreage reports issued so far range from 3.7 per cent to between 8 and 9 per cent decrease averaging about 6.42 per cent decrease.

As to preparations for the new crop, Washington, in weekly summary, under date of April 9th, stated: "In Texas planting made good progress, but warm weather and rains needed. Germination in the south made poor to only fair progress because of cool nights. In Oklahoma soil is prepared but planting delayed because of dry weather. In the Mississippi Valley weather was generally favorable for seeding, with good progress made. Some cotton planted rather generally in Arkansas except in extreme north. In Georgia and Alabama there was too much rain for field work; but in the Carolinas conditions are better, with beneficial rains conditioning soil for planing. A little planting done as far north as southern North Carolina."

Except for the need of moisture in Texas and Oklahoma, especially in the western portions of those states, the weather meanwhile has been more favorable, higher temperatures prevailing inland, while there was a cessation of the rains in Alabama and Georgia.

New England Mill Situation

April 18, 1930.

MILL OPERATIONS in New England have been better during the latter part of March and early April. Activity has, however, dropped off to a slight degree within the past week or ten days, due to a more quiet condition in textile markets, the natural slowing up of business at this time, and the slowness with which Fall business has been forthcoming. Here and there production schedules are being maintained and mills are successfully merchandising their goods, but in many cases this is due to constant manipulation of cloths, variations of product, and selling pressure.

As an index of fine goods operations in New England, the mills of the Berkshire Fine Spinning Associates as the largest operating merger thus far in the section probably are outstanding, and this group has officially announced under recent date that the time for some reduction of output is at hand. A heavy producer of all cotton fine goods as well as rayon cloths, this concern has successfully sold its production in recent weeks, but of late has been taking steps to bring production in line with demand. Other independent mills have also operated a little more closely, with the exception of those on fancies and specialties which in some cases are able to run at a good pace.

Printing Plants are Active.

Activity in New England printing plants continues satisfactory. The Pacific Print Works, in Lawrence, Mass., is the most active industrial unit in that center at the present time. American, Algonquin and smaller establishments are running fairly well, as are also most of the finishing plants which have a good quantity of orders on hand. Generally speaking operations in Rhode Island and Connecticut mills have been better than many expected during the period, New Bedford and Fall River operations have been at about 70 per cent of capacity in active plants, and Boston and Northern New England establishments including the Amoskeag at Manchester, N. H., have been well engaged.

The mergers of New England fine goods mills continue of widespread interest. The Bancamerica-Blair Corporation has been mentioned of late, this being the 1,000,000 spindle merger that Jerome K. Newman has been working on now for upwards of a year. The minimum number of spindles required for this merger is 900,000, and it is known that some have looked favorably on the plan, although they have not publicly announced their intention of joining should the requisite spindleage be reached.

More Mergers.

A late report in the trade is that the Darmouth Manufacturing Company and the Neild Manufacturing Company, both of New Bedford, have reached an agreement to join the Newman enterprise. Previously the Lincoln, Davis, Bristol, Queen City, and Harmony Mills have been mentioned as prospective members of the merger. Altogether this would give an aggregate of 900,000 spindles. Still the rumors go without confirmation, Mr. Newman has declined to comment on the Neild and Dartmouth matter, and the companies themselves are silent. Dartmouth has a continuous record of earnings over many years, and the Neild mill, of which Frank I. Neild is president, has been a successful enterprise.

With regard to the Berkshire merger notice of formal transfer of the King Philip mills to the Berkshire Associates has been filed in Fall River in pursuance of the previously reported vote of the stockholders. The Parker Mills offer by the Berkshire group has been extended to April 30 to allow of adjustment for the exchange of mill stocks. It is now reported that the Parker and Hargreaves bondholders are to receive nine shares of Berkshire preferred instead of 7½ shares as in the original offer.

In the Fall River district one of the outstanding developments is the annual statement of the Algonquin Printing Company as filed for the year ending December 31, 1929. This showed a profit and loss surplus of $2,514,130, an increase of $255,561 from the close of the previous year. The corporation paid 5 per cent quarterly dividends and an extra 20 per cent during the year. The net working capital is placed at $1,697,483.

Pepperell Manufacturing Company, which bought the Granite Mill in Fall River, have sold a unit of that mill to non-textile interests after a futile effort to give this extra unit to the city for a fire station.

The Franklin Rayon Corporation in Providence, R. I., has awarded a contract to a Boston concern for erection of a $25,000 80 x 120 foot mill. The Sayles Finishing Plant is selling land and dwellings not needed for industrial operations to employes. In Putnam, Conn., a section of the Manhasset Mill, the No. 4 unit, has been leased to a Pennsylvania concern. About 100 will be employed.

In Northern New England the principal development is the purchase of the entire weaving equipment of the Lancaster Mills, at Clinton, Mass., by the Amoskeag Manufacturing Company, of Manchester, N. H. The machinery is to be removed in entirety to the Manchester plant. The purchase price, said to be low, was not disclosed. Lancaster Mills until recently were producers of ginghams, shirtings, and novelty dress goods. Business conditions recently caused directors to recommend liquidation. The company had been incorporated in 1844 with original capitalization of $500,000, and developed rapidly until it had about $4,000,000 outstanding in common and preferred stock. A large amount of new machinery was purchased 15 years ago with the last issuance of stock, practically all of which will shortly be in place in Manchester. At the time of liquidation the Clinton concern had 4,312 looms, 261 cards, 105,084 ring spindles, 1,808 twister spindles, and other machinery. About 60 per cent of the machinery will be moved to Manchester within a few weeks. This leaves the Amoskeag with very few competitors in the gingham field as compared with the large number in that business not many years ago.

In Lowell, Mass., the Wanalancit Textile Company, a small rayon mill, has been enlarging its capacity. In Burlington, Vt., the Queen City Cotton Company has suspended operations due to stock accumulations and lack of orders. About 550 persons are out of work as a result. The Sulloway Hosiery Mills in Frankling, N. H., are operating overtime to keep up with a rush of orders. New machinery has been installed, knitters have been brought in from other places, and day and night shifts are being maintained.

The Slater Mills, Inc., and Slater Manufacturing Company through H. M. Slater, have announced the appointment of George Hussey as vice president in charge of sales, the mills having a large production of fine rayon and cotton goods both East and South. Mr. Hussey has formerly been engaged in the brokerage business in New York, serving the trade for upwards of 20 years. He has been president of the Textile Brokers Association in New York since its formation in 1928.

IF YOUR COSTS ARE HIGH *call in the* G.T.M.

When costs are high it's time to see the G.T.M. — Goodyear Technical Man. He finds a way to savings. He knows manufacturing and its problems. He makes plans for effective transmission of goods and power. He studies and measures. Whether it is air, liquid, or horse-power that you wish to move, by skillful application of Mechanical Rubber Goods to the problem he saves time and money. The G.T.M. has had wide experience in industries similar to yours. He knows how and where *to save.*

Throughout the textile industry are G.T.M.-specified economies. He is an expert in the field. He has effected outstanding savings with the new Goodyear Compass Endless (Cord) and Compass Textile (Cord) Belts—*belts with a nearly stretchless core of cord*—on machine drives. He is introducing Goodyear Emerald Cord Multiple V Belting to your plants. He has specified Goodyear Wingfoot Air Hose and Goodyear Water, Steam and Fire Hose for all phases of your operation. The G.T.M. can bring new profit to you now.

For detailed information on how the G.T.M. can lower your costs, write Goodyear, Akron, Ohio, or Los Angeles, Calif.

THE GREATEST NAME IN RUBBER

GOODYEAR

HOSE BELTING MOLDED GOODS PACKING

New Textile Equipment and Publications

AUTOMATIC SELF-DOFFING CALENDER FOR PICKERS.

H. & B. American Machine Co., Pawtucket, R. I., have announced the Ramsdell automatic self-doffing calender for finisher, intermediate and breaker pickers, which is a revolutionary change in picking methods. Within 6½ seconds, it is explained, the device automatically releases the brake, raises the lap racks, severs the lap sheet, doffs the finished lap, places a new lap roll in the calender, carefully folds over the oncoming sheet of cotton, lowers the lap racks, and applies the brake; providing a continuous operation to the picker without stoppage for doffing, and without requiring attention from the tender.

It is pointed out that this is done without the assistance of human hands. The advantages pointed out are that there are no bad piecings, no piling up of cotton on the cages, no damaged screens, and no starting torque, with a definitely fixed yardage and weight for each lap. This attachment has been especially designed so that it may be applied to all existing H. & B. pickers, it is announced. It is hoped to present a detailed, illustrated description of this new development in this department in the June issue.

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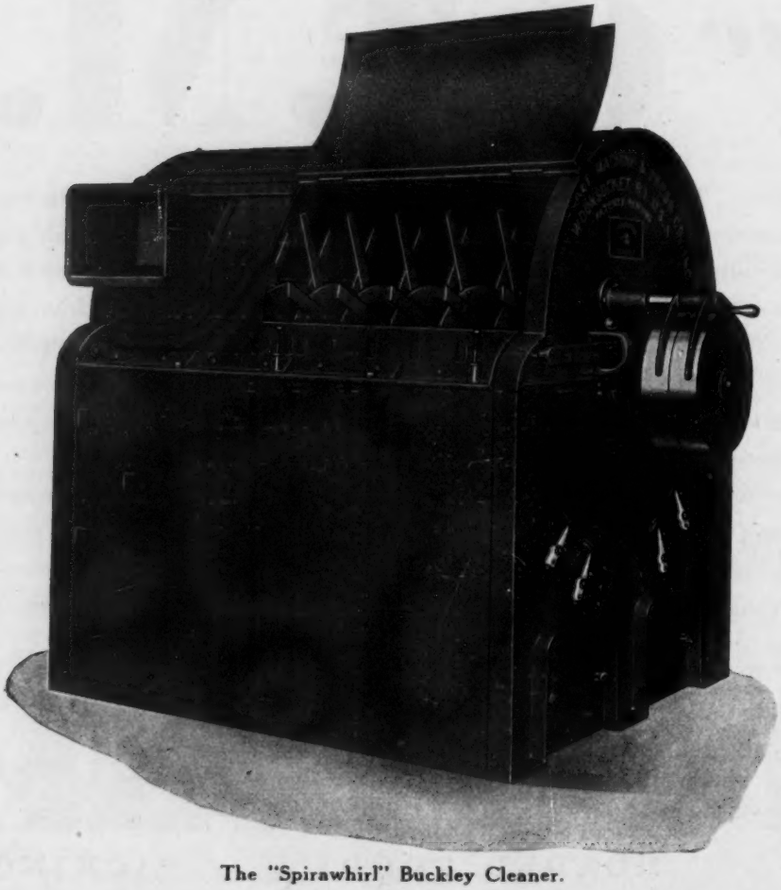
WOONSOCKET ANNOUNCES "SPIRAWHIRL" CLEANER.

Woonsocket Machine and Press Company, Incorporated, R. I., have placed on the market the Woonsocket "Spirawhirl" Buckley cleaner, which they announce as a new development of their horizontal cleaner, with added flexibility of adjustment for various degrees of cleaning on different grades of cotton; and also, by the use of vanes in the upper part of the machine, a positive travel or speed of the cotton through the machine is obtained, to give all the cotton an equal treatment. The machine is shown in the accompanying illustration. The company points out that it is of compact solid construction, the only moving part being the revolving Buckley beater which is equipped with two ball bearings on the outside of the frames. The cotton entering the machine on one side is delivered after passing through the length of the machine from the opposite end and side. The company states that it can be used in any line of opening equipment by galvanized iron pipes or condenser section connections, either direct through the bale breakers, vertical opener or horizontal cleaner.

The machine is equipped with rolled steel grid bars, finished at the end and socketed and milled fixed top and adjustable bottom circles. The bottom circle has a projecting stud which passes through the frame into a swinging indicator, the finger of which indicates the setting of the grid bars on a graduated dial on the outside of the machine. The grid bars are divided into eight groups, each group being provided with an individual indicator finger, so that, it is pointed out, it is necessary only to swing the point of the indicator on the graduation or mark desired and secured by a cap screw at the setting desired. In this way a record can be kept of the setting which gives the best results for different grades of cotton, etc. The manufacturers explain that all cotton is treated to a vibrating cleaning action over a surface equivalent to 96 grid bars and 240 lineal inches of perforated sheet metal cleaning area. The company states that this cleaner is equally adaptable to long staple fancy cotton and short staple China and India cotton, and will handle up to 3,000 pounds per hour with about one-half that amount recommended for best efficiency.



The "Spirawhirl" Buckley Cleaner.

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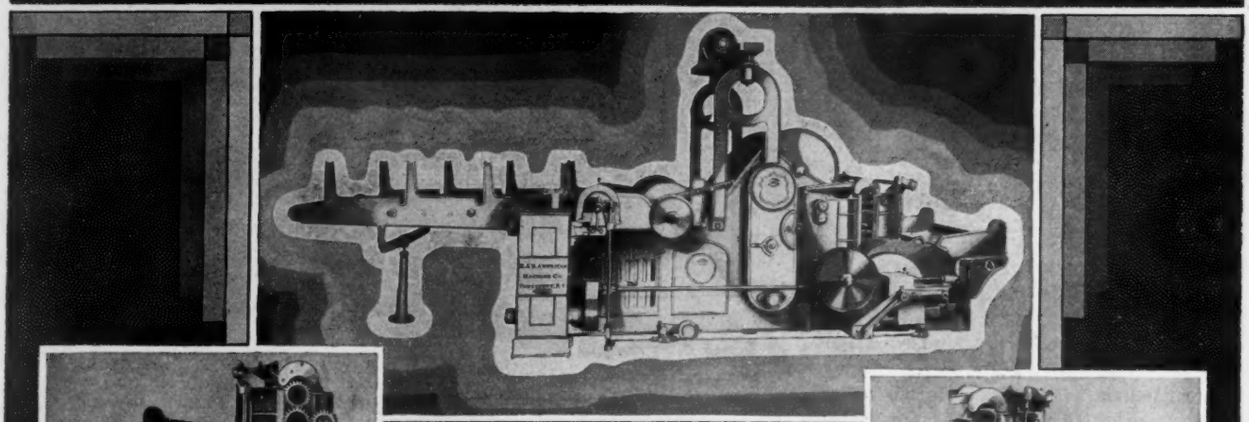
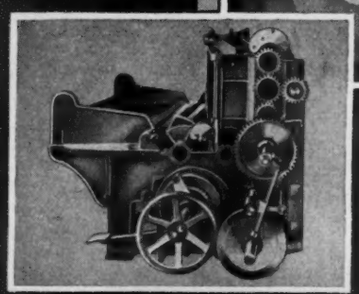
QUAKER CITY ISSUES BOOKLET.

Quaker City Chemical Company have just issued a very interesting pocket-size booklet of information for those interested in textiles. The book gives practical information with reference to the chemicals, oils, etc., manufactured and distributed by the company, and in addition gives helpful information concerning the classification and grading of cotton, spinning, weaving, sizing, bleaching, dyeing, preventing mildew, etc., comparative yarn tables, and other information. It contains 48 pages. Copies of the booklet may be secured upon request to the company at 934 North 6th Street, Knoxville, Tenn., or 2738 North Broad Street, Philadelphia, Pa.

ANNOUNCING THE MOST OUTSTANDING DEVELOPMENT IN PICKING MACHINERY IN 50 YEARS BY THE H & B AMERICAN MACHINE CO.

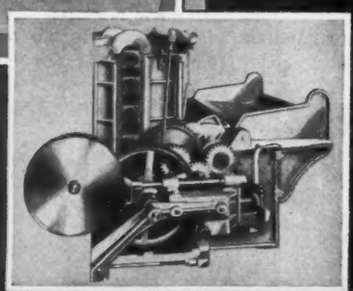




THE illustration above shows one of our New Single Beater Finisher Lappers fitted with the Ramsdell Automatic Self-Doffing Calender.

The illustrations at the right and left show each side of the Calender with Gear Covers and Casings removed.

This attachment has been especially designed so that it can be readily applied to all existing H & B Pickers.



THE RAMSDELL AUTOMATIC SELF-DOFFING CALENDER

UNCANNY in its operation. With almost imperceptible hesitation it automatically removes the completed picker lap, places a new lap roll in the calender, carefully folds over the oncoming sheet of cotton, lowers the lap racks and applies the brake . . . continuous operation from start to finish . . . without assistance of human hands. The results are no bad piecings, no piling up of cotton on the cages, no damaged screens, no starting torque—and with absolutely fixed yardage and weight for every lap.

We shall be glad to provide further detailed information upon request or arrange for a demonstration at your convenience.

8 AUTOMATIC OPERATIONS IN 6½ SECONDS

1. Releasing brake
2. Raising lap racks
3. Severing lap sheet
4. Doffing finished lap
5. Placing new lap roll
6. Folding lap end
7. Lowering lap racks
8. Resetting brake

H & B AMERICAN MACHINE CO.

PAWTUCKET, RHODE ISLAND

BOSTON OFFICE
161 Devonshire Street

ATLANTA OFFICE
815 Atlanta Trust Co. Bldg.

COTTON PREPARATORY AND SPINNING MACHINERY

CIRCULATING SPINDLE WINDER BULLETIN.

Abbott Machine Company, Wilton, N. H., manufacturers of the Abbott Circulating Spindle Winder, have issued Bulletin No. 102 describing and illustrating this new machine, which is designed for winding cones or tubes from filling or warp-wound bobbins, and is so arranged that the operator remains stationary, in a seated position, and the winder-spindle supporting the cheeses or cones pass slowly around the frame within easy reach of the operator.

This company is also distributing Bulletin No. 100, describing a method of making color swatches quickly, which is marketed by this company.

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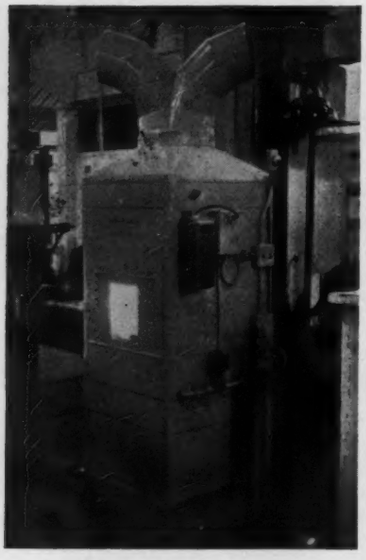
PARKS-CRAMER UNIT AIR CONDITIONER.

A compact unit air conditioner has been announced by Parks-Cramer Company, Fitchburg, Mass., makers of air conditioning apparatus for over 20 years. The unit heater, shown in the accompanying illustration, is made in three capacities handling 500, 1,000 and



Unit Air Conditioner.

1,500 cubic feet of air per minute. The total power required is 290 watts, for the 100 cubic foot units, and all of the water consumed is evaporated. An immersion heater, thermostatically controlled, holds the water at any temperature desired, it is explained. The air, after passing through the humidifying chamber, is warmed by an extended surface heater, also thermostatically controlled by a sensitive element placed anywhere in the room. The new Park Spray Hygrostat controls the humidity of the air. The device is supplied with or without any of these supplementary devices as desired.

The humidifying unit is of the centrifugal type. The high efficiency of the spray generating device, it is pointed out, reduces the amount of water handled to such an extent that the power consumption is remarkably low for the results accomplished. Water is thrown off by a rapidly revolving disc in a fine spray, and circulated throughout the room by a multi-blade fan mounted on the same shaft as the disc. There are eliminator plates to remove all of the free moisture, allowing only the saturated air to pass through. The unit is designed for laboratories, testing rooms, conditioning rooms, etc. The company states that the equipment will produce a decided cooling effect during much of hot summer weather. The unit may be placed either in the room or located outside the room and connected to it with supply and return air ducts.

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NEW BUTTERWORTH PENETRATING TYPE DYEING MACHINE.

H. W. Butterworth & Sons Company, Philadelphia, have recently announced another new machine — a penetrating type dyeing machine—their sixth new machine within a year. This machine, which is patented, has yarn racks, principally of the split type, to permit preparation of the next lot while the preceding one is dyeing; and the tanks, of suitable material for the purposes. They are of an improved design, it is pointed out, incorporating provision for equalizing and distributing the flow of liquor and fitting of the yarn rack into the tub in such a manner as to secure penetration evenly throughout the load with a gentle flow of liquor. This feature, the manufacturers explain, insures penetration and level coloring, protecting the yarn from tangling. The accompanying illustration shows a sectional end view of the machine, illustrating the protruding rail or shelf in the sides of the tubs, which extends also across both ends, and on which the yarn rack rests. The company points out that this feature stops leakage of circulation at the sides and ends, which is inclined to tangle the yarn, and the slight compression on the yarn, and a tendency of the rails to deflect the circulation toward the center of the load, tends to even distribution of circulation and color, and a greater "windability" of the yarn. The manufacturers further state that the machine operates at lower speed, for reducing wear and tear; and at the same time reduce the dyeing time and consumption of steam, also providing greater flexibility as reguards size of lots that may be dyed in a given size of machine. This type of machine is also available for raw stock dyeing, it is stated.

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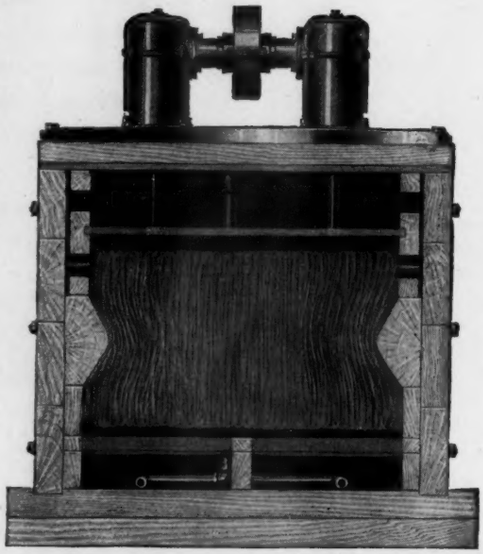
NEW COMBINATION BLOWER AND VACUUM CLEANER.

According to The United States Electrical Tool Company, Cincinnati, a new cleaner that does double duty about the shop is now available through jobbers.

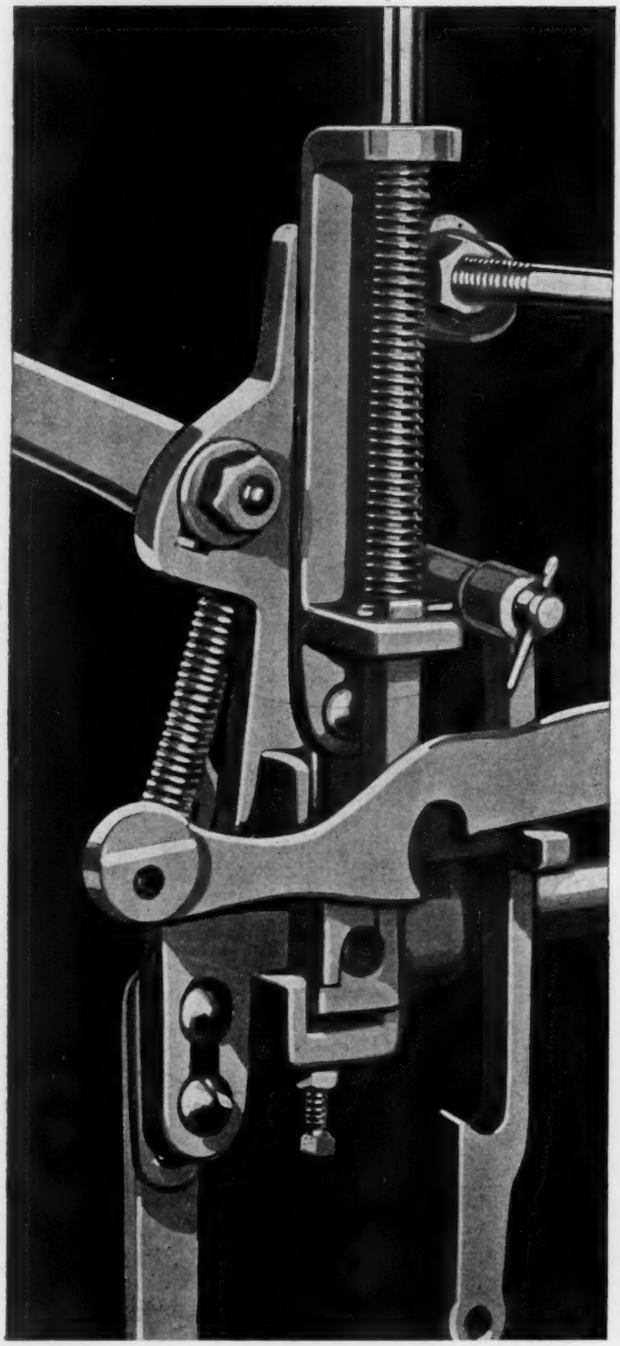
They state that the new tool not only provides a powerful suction or vacuum cleaner, but that by removing the dust bag and changing the location of

Combination Blower and Cleaner

the hose, it provides a blast of air that is useful for the various kinds of drying, for blowing dust and other free dirt from places hard to get at. Its ease of handling is one of the features of this new device.



Penetrating Dyeing Machine.



HALTON'S JACQUARDS

To replace a cylinder hammer on a Halton Jacquard—don't just file and guess the alignment. Adjustable hammer brackets make the job easy and get it done right. Loosen two bolts, pivot until the hammer is firmly seated on the cylinder head, tighten—and it's set, without filing or grinding.

Another development to speed production! Halton has developed or introduced into this country every successful improvement on jacquards. The new catalogue shows them all. Want it?

THOMAS HALTON'S SONS,
"C" AND CLEARFIELD, PHILADELPHIA.

SELLING AGENTS

H. A. FORBES, PATERSON, N. J.
THOMAS S. CAPPER, INC., CHARLOTTE, N. C.
FRED H. WHITE, CHARLOTTE, N. C.

A NEW APPARATUS FOR EVAPORATED MOISTURE.

Manufacturers Machine Company, North Andover, Mass., have recently announced and placed on the market the patented Sjostrom Atmospheric Normalizer, which is described as a scientific apparatus for supplying evaporated moisture to the atmosphere and especially designed for industrial plants and other large spaces requiring a normal and evenly distributed moisture content. In announcing the equiment, the company quotes the following statement from Sir Benjamin Dobson: "Taking into consideration the cost of the plant, the power, the cost of supervision, the cost of replacement and repairs necessitated where spray humidifiers are employed, and, above all, the inefficiency and inequality of the results as compared with the system of evaporation, I feel justified in declaring that, in my opinion, the cheapest, most efficient, most regular and simplest method of maintaining a constant degree of humidity in an enclosed body of air is the application of some simple system of natural evaporation."

The company points out further that ordinarily the air near the ceiling is much warmer than the air near the floor. By creating an air current from the floor to the ceiling, the normalizer assures perfect air mixing circulation and uniform temperature and humidity throughout its sphere of operation, the company states.

The accompanying views show the equipment closed and open. The apparatus consists of a chamber about 30 inches square and 54 inches high. The top of the chamber is provided with a brass wire screen; immediately below this screen is a 24-inch fan operated by a ¾ h. p. vertical motor; below the fan is a series of wicks which are caused to revolve around brass rolls which are kept in motion by the fan motor. The lower part of these wicks run through a water tank, being kept constantly wet.

On starting the motor, the air of the room is drawn into the normalizer from two openings at its lower part, passes across the series of wet wicks and is discharged in a vertical direction. In passing across the wet wicks, the air absorbs evaporated moisture in proportion to its relative humidity; that is, the drier the air the more moisture it absorbs; as the air increases in moisture content, evaporation is automatically diminished so that there is consequently no possibility of saturation. the company explains, and no danger of liquid moisture being deposited on articles in the room. The amount of air passing through the normalizer is about 5,000 cubic feet per minute, and the evaporating surface exposed to this air amounts to about 165 square feet.

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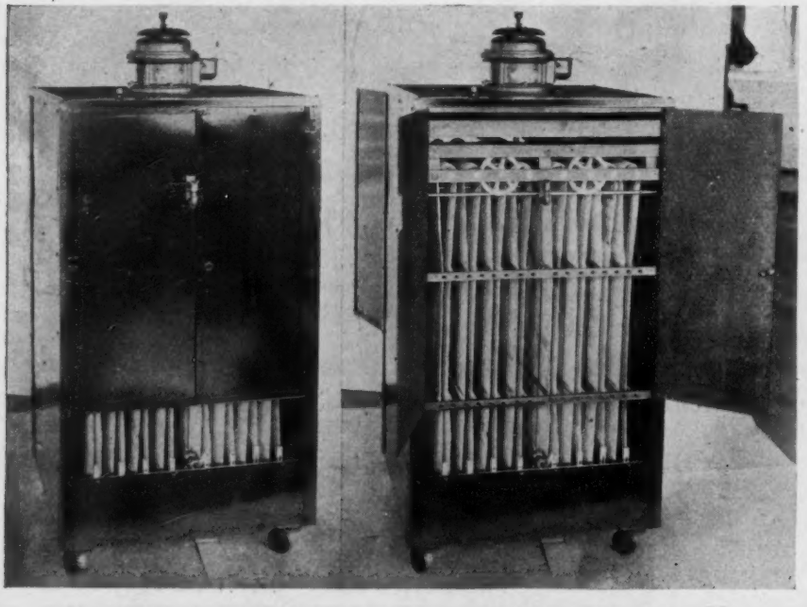
NEW BOOKLET BY FRANKLIN PROCESS CO.

Franklin Process Company, 564 Eddy Street, Providence, R. I., have issued a booklet, "Identification—A New Trend in Color," which is distributed as the twelfth of a series discussing the importance of identified fast colors. The booklet gives a list of manufacturers which label their products, which are colored, indicating that the colored yarns in the fabric are Franklin Process dyed, fast to washing and light.



Two Views of Atmospheric Normalizer. Left, Closed; Right, Open.

STAFFORD ANNOUNCES NEW DOBBY JACK.

Stafford Company, Readville, Mass., have announced a new steel dobby jack, which, it is pointed out, permits the removal of worn out hooks without taking the jack-back out of the dobby. Patent has been applied for. The device is shown in the accompanying illustration. As will be noted, the slotted hook is held in place by a tempered spring washer riveted to the hook. When it is necessary to remove a worn hook, the company explained, the whole operation can be performed quickly by lifting one side of the spring washer and sliding the hook off. Then a new hook can be slipped in place instantly. Both the back and hook are made of cold rolled hinge steel, and the company states that the new dobby jack is available to fit any standard loom.

New Steel Dobby Jack.

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BUTTERWORTH ISSUES FOLDER ON MEEHANITE CASTINGS.

H. W. Butterworth & Sons Company, Philadelphia, licensees for the manufacture of Meehanite castings, have just issued a folder from the foundry division of the company at Bethayres, featuring Meehanite castings. The folder gives a list of the places where these castings can be used to advantage, and makes comparisons with this metal and grey iron. Some of these advantages were pointed out in a recent note describing this material in these columns.

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LINK-BELT ISSUES A NEW FOLDER.

Link-Belt Company, Indianapolis, recently issued Folder No. 1177, which is devoted to the Link-Belt silent chain, which they state is the ideal drive for cotton gins and cotton oil mills. The folder carries many helpful illustrations on installation of the drives.

GO AFTER THE ELUSIVE PROFIT

CHASING the elusive profit is an exciting business if you catch it—and very often you'll find it in the most unexpected places. Many a mill operator has found it in lubrication. This seems such an unimportant factor in operating costs that it is often overlooked. As a matter of fact, lubrication, with its ramifying influence on the entire mill operation—on power, unit output, depreciation, maintenance and even the quality of product—is a most important item.

Call in a lubrication expert for a thorough survey. The professional services of a qualified Texaco Lubrication Engineer are yours on request. He will study your plant and make definite recommendations of improved lubricants and lubricating practices —if they *can be* improved. He'll estimate your probable savings through effective lubrication. There's one promising place to look for those elusive profits. The Texas Company has been notably successful in the textile field—so write The Texas Company first.

TEXACO

There is a Texaco Lubricant for Every Purpose

THE TEXAS COMPANY
135 East 42nd Street, New York City

LUBRICANTS

NEWS ITEMS *with a Textile Slant*

RECENT INSTALLATIONS OF HUMIDIFIERS.

Washington Mills Company, Fries, Va., have recently installed two Bahnson conditioning rooms in their plant at Fries, and have also installed new Bahnson humidifiers in their Mayodan, N. C., plant. Other mills which have made recent installations of this equipment are the Habersham Mills, Habersham, Ga., Judson Mills, Greenville, S. C., Spencer Corporation, Cleghorn Mills, Spindale, N. C., and American Silk Mills, Orange, Va. The equipment was furnished by the Bahnson Company, Winston-Salem, N. C.

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PATENT ISSUED ON COMPOUND.

According to Paul B. Eaton, patent attorney, Charlotte, N. C., there was issued on April 1, 1930, patent number 1,752,708 to Emanuel Froham of Precision Gear & Machine Co., Gastonia, N. C., which is one of the patents which the company has covering the Stewart compound for a differential motion for a roving frame.

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TWO NEW SALES MANAGERS APPOINTED BY SQUARE D.

Two new assistant sales managers were recently appointed by the Square D Company, C. E. Cook, formerly Square D branch sales manager at Detroit, was made assistant sales manager in charge of sales of all meter and entrance switches, as well as voltage testers, while E. L. Pittenger moves up to assume the duties of assistant sales manager in charge of sales of Square-Duct and industrial safety switches. Mr. Pittenger was formerly branch sales manager at Pittsburgh. The headquarters of both men will be in Detroit.

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NATIONAL OIL PRODUCTS INCREASE SALES FORCE.

The National Oil Products, of Harrison, N. J., have recently completed their southern sales representation with the addition of J. Frank Richardson, Jr., of Greenville, S. C., to represent them in that state. Mr. Richardson was formerly connected with L. Sonneborn Sons, and is well known to the trade throughout the southern territory.

L. L. Okey, of Chattanooga, Tenn., and Claude R. Slayton, of Charlotte, N. C., are the other southern representatives. The company has also placed a warehouse stock at Chattanooga.

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CATLIN & CO. AND FARISH CO., CONSOLIDATE.

Consolidation of Catlin & Co., Inc., and the Farish Co., Inc., dry goods commission merchants representing a number of cotton mills in North Carolina, South Carolina and Georgia, was to take place on April 1. The new organization being known as Catlin-Farish Company, Inc.

A. J. Cumnock, president of Catlin & Co., will be president of the new concern, and G. E. Huggins, president of the Farish Company, will be treasurer.

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PER CAPITA CONSUMPTION INCREASED.

Per capita consumption of cotton cloth is nearly 20 per cent greater than it was 30 years ago, according to an analysis of statistics just made by Paul B. Halstead, secretary of the Cotton-Textile Institute.

This analysis of government and trade statistics indicates that per capita consumption has increased from 57 square yards in 1899 to an average of 68 square yards during the past seven years. It also indicates that the annual volume of cotton cloth consumed in this 30 year period has increased more rapidly than population.

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DURENE ASSOCIATION OFFERS $100 PRIZE.

It is stated that the Durene Association of America in surveying the manufacturing and retailing decorative fabric market has brought to light an increasing use of Durene yarns in the decorative field. As a result of this observation and in cooperation with the Art Alliance of America, the Durene Association recently offered a prize of $100 for the best design in a drapery fabric with durene warp and filling.

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NEW COMPANY ORGANIZED.

Gastonia Roller, Flyer and Spindle Co., Gastonia, N. C., is the name of the newly organized company, formed by the combining of Lowry Bros. Textile Machine Works, Gastonia, and the Textile Spindle & Flyer Co., of Charlotte, N. C. B. E. Byrd is president of the new company and C. E. Huneycutt is secretary and treasurer. The staffs of the two old organizations are with the new company. The company does general repair work on steel rollers, flyers and spindles.

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STEWART COMPOUNDS.

Precision Gear and Machine Co., Gastonia, N. C., recently installed their Stewart Compounds for roving frames in the following mills: Globe Manufacturing Co., Augusta, Ga.; Bemis Bag Co., Bemis, Tenn.; and American Spinning Co., Greenville, S. C.

:: :: ::

TEXTILE RESEARCH COURSE.

A course in textile research and analysis will be offered at the Textile Laboratory of M. I. T., Cambridge, Mass., this summer. The work begins June 17, and includes a series of 30 illustrated lectures, supplemented by approximately 100 hours of "lab" work.

The course is intended to fit the student to take up textile laboratory research work actively; to familiarize him with the construction and method of operation of testing equipment; to make simpler the utilization of present equipment; and to provide a foundation of useful and specific information leading to a better understanding of the whole research problem as applied to the textile industry.

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CENTENNIAL BOOKLET BY FAIRBANKS, MORSE & CO.

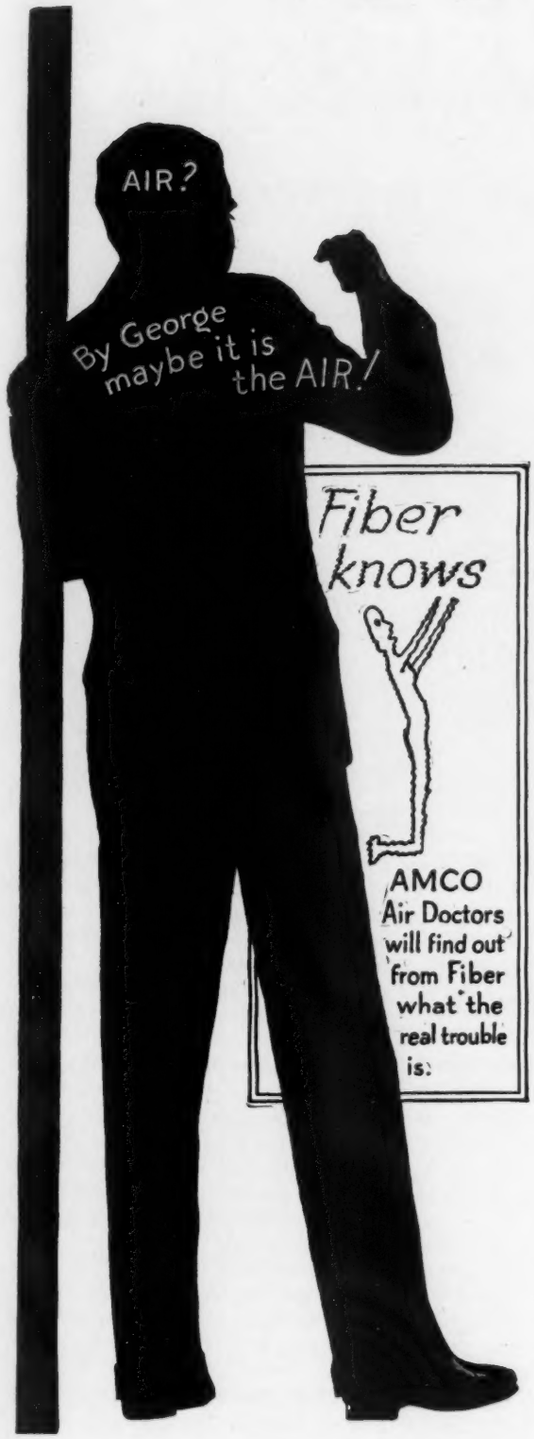
Fairbanks, Morse & Company, 900 South Wabash Avenue, Chicago, Ill., have issued a booklet entitled "Beginning the Second Century," which is a piece of literature produced in celebration of the centennial anniversary of the invention of the platform scale by Thaddeus Fairbanks and the founding of the company which bears his name. The booklet is elaborately prepared with excellent illustrations. The story goes into the history of the development of weighing machines, and tells something of the accomplishments, aims and aspirations of the Fairbanks, Morse Company.

:: :: ::

CAMACHINE.

A bulletin, describing the Camachine type 40 model 7 for inspecting, winding, trimming and slitting has been issued by Cameron Machine Company, 61 Poplar Street, Brooklyn, New York. The company states that the labor saving features of this machine for performing any or all of the aforementioned operations are highly appreciated by all kinds of fabric manufacturers.

THE CARD ROOM SHOULD BE HUMIDIFIED



WHY? For the same reason that you need them in practically every other department of a mill, so you may be sure that the cotton maintains the proper amount of moisture *from the start to the end* of any process.

You know this

Cotton, of course, cleans best when it does not have a large moisture content. But if the fiber is very dry, it will break, making many neps. The invisible waste and fly will be large, and static will result with usual troubles.

But do you know this?

On the other hand, if the proper moisture content is in the cotton in lap form, and the right humidity is maintained at the *delivery end* of the cards, there will be good cleaning and practically no broken fibers and neps. The invisible waste will be cut down, there will be no static, no matter what the outside weather conditions may be, and the sliver will be even, firm, smooth, and coil well in the cans.

The trouble is in the air

The swirling around and the straightening out of the fibers in the cards *does* dry out cotton, and this loss of moisture must be replaced or trouble will be had not only at the cards, but also at the drawing frames or combers, as a large amount of moisture cannot be immediately forced into the sliver.

Get an air-doctor's opinion

If you have trouble in the roving, the yarn, the weaving, the finished goods or the goods after shipment, our engineering staff of experienced air-doctors can show you how to eliminate the trouble and how to have a sweet-running plant ever after, with improved working conditions as a bonus.

AMCO humidity engineers make a written survey of your humidification needs, without cost or obligation. Write for case examples of their work.

This newly designed Amco Humidity Control automatically regulates and controls humidity in Textile and other mills without using wet or dry bulb actuated devices.

AMERICAN MOISTENING CO.

Humidifying Devices

Air Doctors Since 1888

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Providence, R. I.

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Ross Whitehead & Co., Ltd.
1111 Beaver Hall Hill
Montreal, P. Q., Canada

SALES OFFICES
Boston, Mass. Atlanta, Ga.
Charlotte, N. C. Greenville, S. C.

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

Geo. Harris.

George S. Harris, for the past ten years president and manager of the Exposition Cotton Mills, Atlanta, Ga., resigned this position last month. He had not announced his future plans at the time of going to press.

J. A. Miller, formerly president of the American Textile Co., Atco, Ga., prior to the purchase of that plant by the Goodyear interests, has become executive vice-president at the Exposition Cotton Mills. **P. E. Glenn** is secretary-treasurer, and **J. W. Hames** superintendent.

H. N. Cappel has been appointed sales manager of Tubize Chatillon Corporation, according to J. E. Bassill, vice-president of the concern. Mr. Cappel started with the company in 1925 as their sales representative in Pennsylvania and has recently been in charge of the advertising and technical research departments in New York.

Charles L. Lineberger was recently promoted from overseer of spinning to superintendent of Osceola Mill No. 1 at Gastonia, N. C.

J. E. Wilson has resigned as overseer of weaving at the Pioneer Mills, Incorporated, Guthrie, Oklahoma, and has accepted a similar position at the Alabama Mills Company plant at Wetumpka, Alabama.

C. Brigham Allen, Jr., has been appointed district sales representative of the Philadelphia office of the Reliance Electric & Engineering Co., Cleveland, manufacturers of alternating and direct current motors.

Jack L. McKee, of Chester, S. C., recently became connected with the Federal Phosphorous Co., of Birmingham, Ala. He is to cover North Carolina, South Carolina and Virginia.

H. S. Barber has accepted a position with the Du Pont Rayon Company at Richmond, Va., as chemist. He is a recent Clemson College Textile School graduate, and leaves a position with the U. S. Department of Agriculture to go into the rayon industry.

C. C. Roberts, for the past seven years overseer of carding at the Watts Mill, Laurens, S. C., has become overseer of carding at the Aiken Mills, Bath, S. C.

C. Grant Isaacs, formerly manager of the Charlotte district office of the United States Bureau of Foreign and Domestic Commerce, was recently made special assistant to Dr. Julius Klein, assistant secretary of commerce. Marvin Shirley will replace Mr. Isaacs.

L. R. Greer recently resigned the position of second hand in the spinning department at Shelbyville, Tenn., to accept the position of overseer of spinning at Clinton (S. C.) Cotton Mills.

W. C. Bobo, formerly general manager of the Judson Mills, Greenville, S. C., is now assistant to the president of the Chadwick-Hoskins Co., Charlotte, N. C., and the Gossett Mills, Anderson, S. C. He is in charge of the rayon departments of both companies. Mr. Bobo, who, until the time of his resignation, had been connected with the Judson Mills for about 15 years, is looked upon as one of the outstanding mill managers in the industry.

S. C. Davis recently received the promotion from overseer of twisting to superintendent of Division No. 2, Loray plant of the Manville-Jenckes Company, Gastonia, N. C.

A. V. Wright, overseer of day spinning at the Hermitage Cotton Mills, Camden, S. C., recently resigned.

C. W. Campbell, who until recently was superintendent of the packing department of the Rock Hill (S. C.) Printing & Finishing Co., has resigned to accept a position with a large finishing plant in Pennsylvania.

Wilfred Nutt has been made superintendent of the Sidney Hosiery Mills, Inc., Graham, N. C.

J. T. Jordan is now overseer of carding and spinning at the Hermitage Mills, Camden, S. C.

J. J. Gillespie, superintendent of the Rollinson Mills, Rocky Mount, N. C., recently resigned.

E. A. Feimster has been promoted from overseer of dyeing to assistant superintendent of the Eagle & Phenix Mills, Columbus, Ga. He is a graduate of the Textile School of North Carolina State College.

L. L. Okey, who recently became connected with the National Oil Products Co.

George F. Becknell has been made production manager of the Waldensian Weavers, Inc., Valdese, N. C.

Charles Vissage has been given the position of master mechanic at the Oconee Spinning Mill, Delano, Tenn.

Frank Bagwell, who has been connected with the Beaumont Mfg. Co., of Spartanburg, S. C., as second hand of the cloth room, is now overseer of the cloth room at the Arkwright Mills, of Spartanburg.

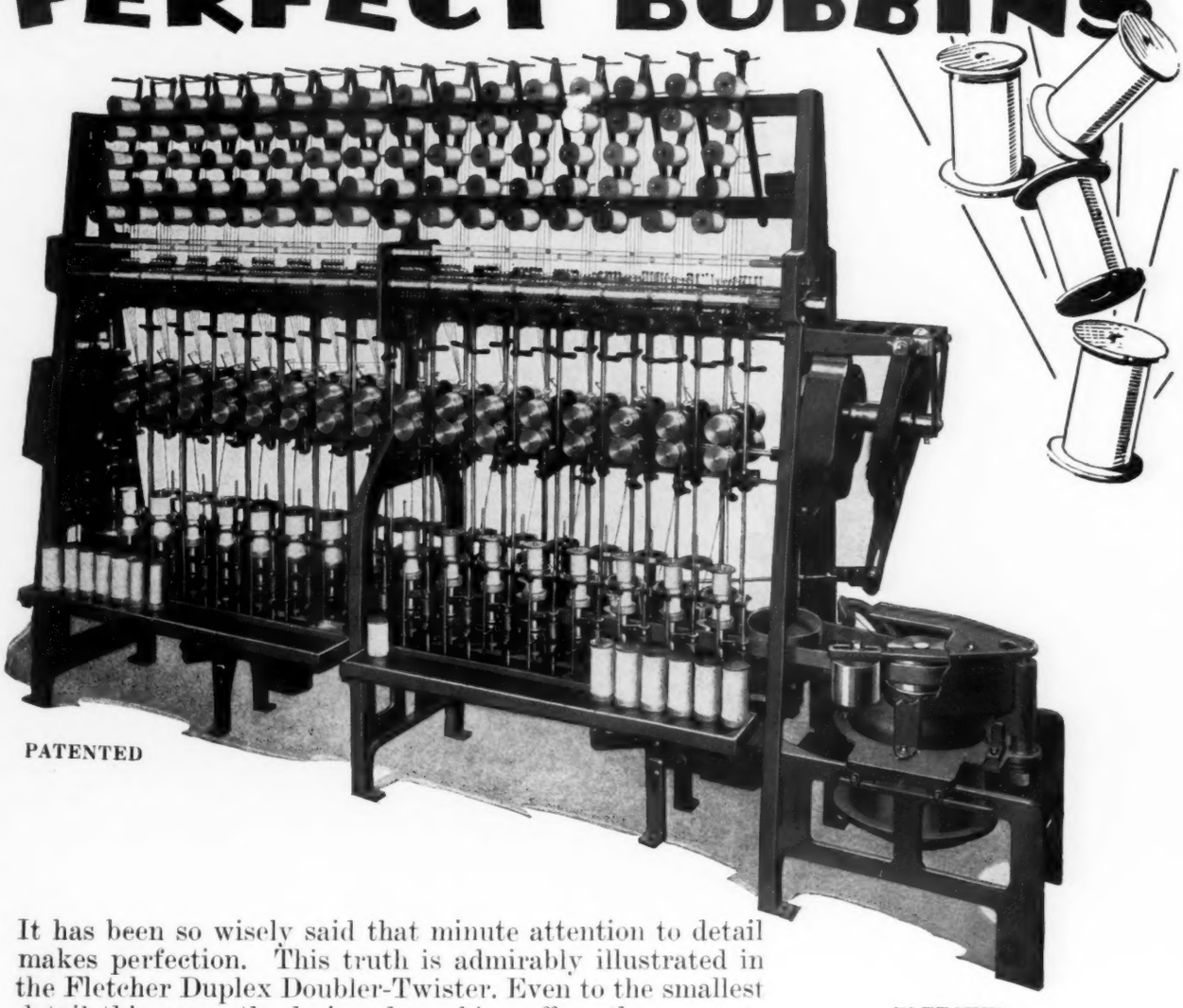
Edwin H. Marble, president of the Curtis & Marble Machine Co., Worcester, Mass., recently read a very interesting paper at the 50th anniversary celebration of the American Society of Mechanical Engineers, reviewing the progress made by the textile industry in America in the last half a century. Mr. Marble has been a member of the society since its organization.

C. O. Smith, of Lancaster, S. C., is now superintendent of spinning at the plant of the Middleburg Mills, of Batesburg, S. C. He succeeded W. T. Morton, who resigned to become overseer of spinning at the plant of the Aragon-Baldwin Mills, Rock Hill, S. C.

F. E. Kramer has resigned his position of superintendent of the Hudson Silk Hosiery Co., Inc., Charlotte, N. C., to accept the position of superintendent at the Morten-Davis Hosiery Mills, Dallas, Texas.

Dalton O. Carpenter has been promoted from overseer of spinning at the Thrift Mill of the Kendall Company, Paw Creek, Charlotte, N. C., to assistant manager of the Oakland Mill, Newberry, S. C.

PERFECT BOBBINS



PATENTED

It has been so wisely said that minute attention to detail makes perfection. This truth is admirably illustrated in the Fletcher Duplex Doubler-Twister. Even to the smallest detail this correctly designed machine offers the very utmost in doubling and twisting satisfaction. Take for example the manner in which perfect bobbins are assured. Each builder ring is mounted on its own bracket and can be individually adjusted for any unevenness in the building height of the bobbin.

This is but one of the many exclusive Fletcher features embodied in this machine and is fully described in an interesting folder, a copy of which awaits you.

Send for bulletin 34 A—no obligation, of course.

FLETCHER DUPLEX DOUBLER-TWISTER for SILK or RAYON

Made by the makers of the Fletcher Whirlwind Extractor . . . last word in profitable, dependable extraction.

FLETCHER DUPLEX DOUBLER-TWISTER

FLETCHER WORKS

formerly SCHAUM and UHLINGER

GLENWOOD AVE. and SECOND ST. PHILADELPHIA, PA.

RAYON AND SILK THROWING MACHINERY

THE FLETCHER LINE OF THROWING MACHINERY COMPRISES SINGLE AND DOUBLE DECK TWISTERS, DUPLEX DOUBLER-TWISTERS, WINDERS, REELS, DOUBLERS AND BUNDLING PRESSES

UNITED MERCHANTS *Install* BARBER-

The Aiken Mills, Inc., Langley Division, at Langley. . . New automatic spooling and high-speed warping, Barber-Colman products, were installed.

New Spoolers and Warpers Replace Old Machines

United Merchants and Manufacturers, Inc., have recently completed reorganization of three southern mills located at Langley, Bath, and Clearwater, S. C. Considerable work was done, the mills being brought up to date, new machinery installed where necessary, new buildings added, a power house built, and provisions made for future expansion. Among the machinery additions was a complete and uniform application of Barber-Colman Automatic Spoolers and High Speed Warpers in all three mills.

Aiken Mills, Inc., Langley Division, is equipped for the manufacture of print cloths, having 55,744 ring-spinning spindles and 1,300 looms. There are 4 Barber-Colman Spoolers and 4 Warpers in this mill.

Aiken Mills, Inc., Aiken Division, at Bath has ring-spinning spindles approximating 40,000 in number and 784 looms, the principal product being plain and fancy combed marquisettes. Two each of the Barber-Colman Spoolers and Warpers are located here.

Seminole Mills at Clearwater is equipped for making combed broadcloths, with 28,000 spindles and 508 looms. The machinery reorganization was complete and thorough at this mill as in the other two, among the new equipment being 2 Barber-Colman Spoolers and 2 Warpers.

Thus are added more Satisfied Users.

BARBER-COLMAN COMPANY

General Offices and Plant

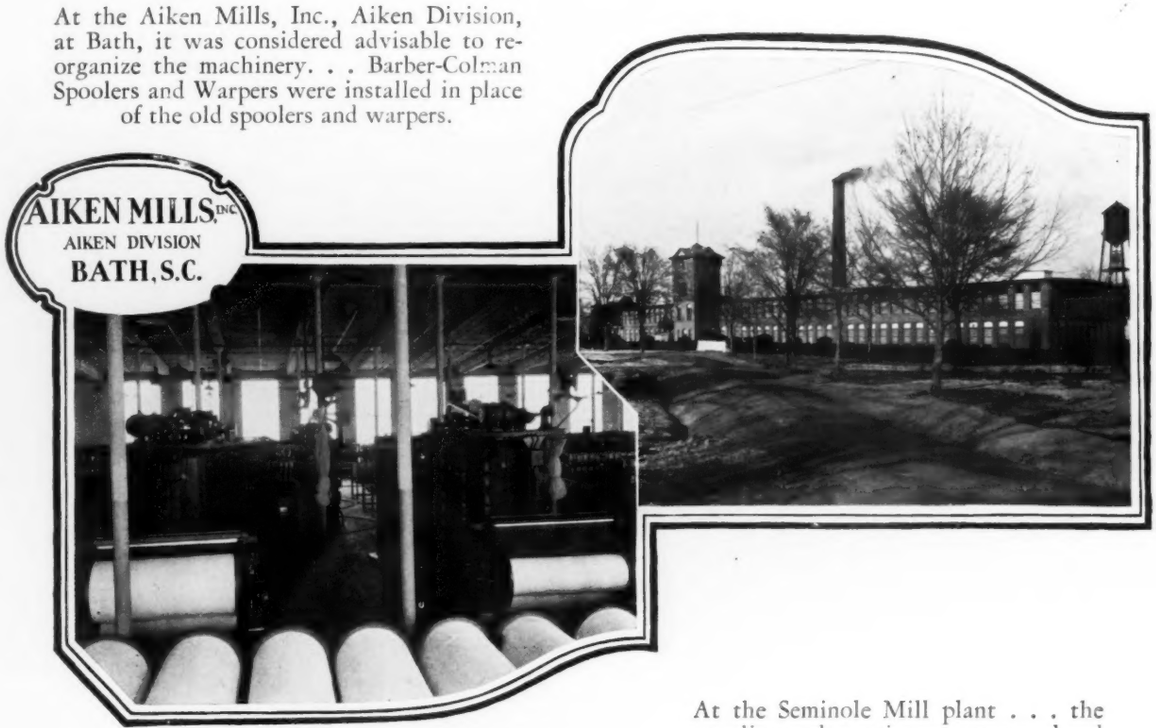
ROCKFORD, ILL., U. S. A.

FRAMINGHAM, MASS. GREENVILLE, S. C.

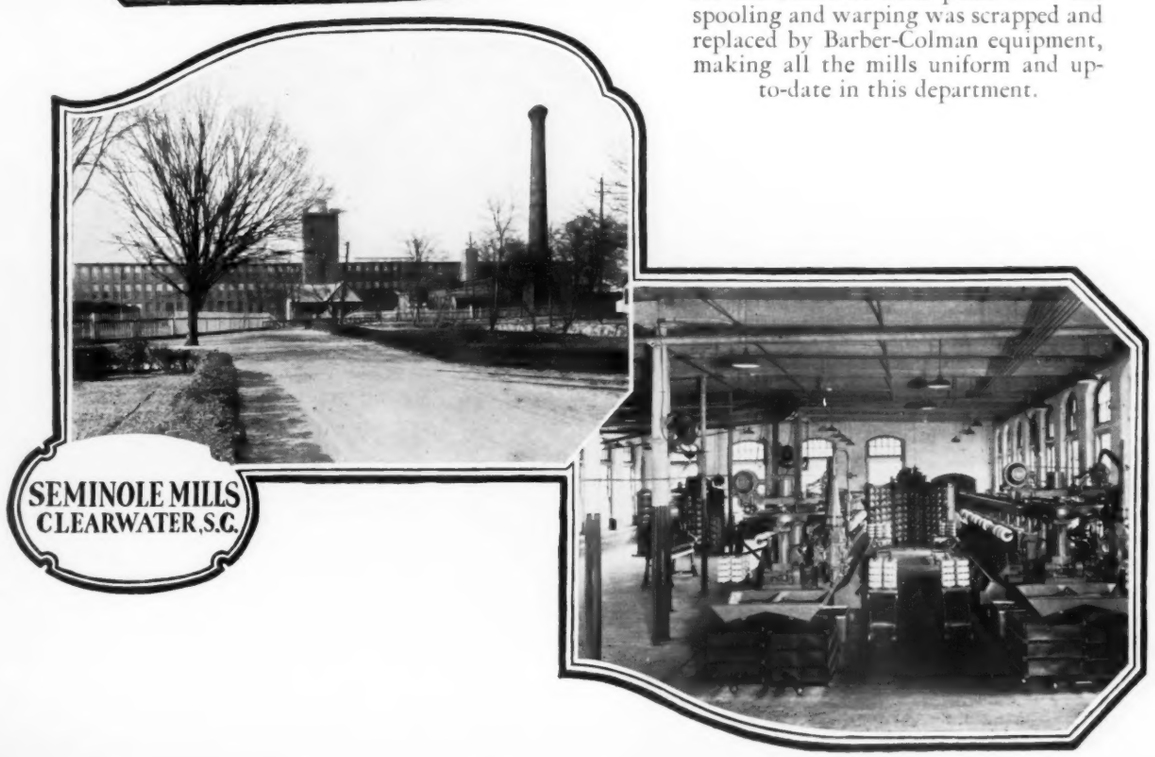
and MANUFACTURERS, *Inc.*

-COLMAN *Equipment*

At the Aiken Mills, Inc., Aiken Division, at Bath, it was considered advisable to reorganize the machinery. . . Barber-Colman Spoolers and Warpers were installed in place of the old spoolers and warpers.



At the Seminole Mill plant . . . the spooling and warping was scrapped and replaced by Barber-Colman equipment, making all the mills uniform and up-to-date in this department.



What is U S HARDWEAR FINISH 13D ?

A recent development by U S Engineers—a super HardWear Finish for your A L Bobbins, Cotton and Wool Filling Bobbins, and Triptods, designed to meet the universal need for a HardWear surface with the toughness and durability of the famous U S Number Fifty-One. U S HardWear Finish Number 13D is guaranteed to definite limits of conditioning heat and humidity—135° F., 100% relative humidity.

NOW—no more waste yarn, no sticky surface, no uncertainty. Let U S HardWear Finish Number 13D solve your conditioning problems. "The Story Back of U S HardWear Finish No. 13D" tells what this special U S Finish can do for you. Send coupon for your copy today.

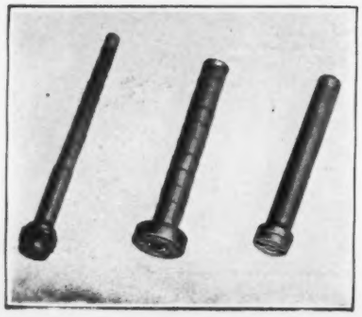
The Story of 13D describes the successful search of U S Engineers for a heat-resistant surface. Send coupon below for your copy.

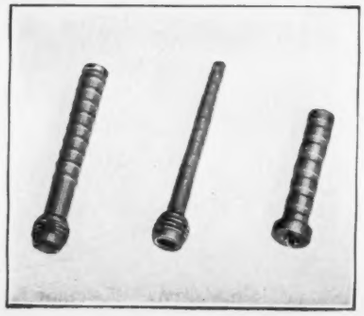
Founded in 1857

U S BOBBIN & SHUTTLE COMPANY

MANCHESTER, N.H. EASTERN DIVISION
MANCHESTER, N.H.~GOFFSTOWN, N.H.
LAWRENCE, MASS.
WILLOUGHBY, VT.~PHILADELPHIA, PA.

MONTICELLO, GA. JORDAN DIVISION
GREENVILLE, S.C.
MONTICELLO, GA. DUBLIN, GA.
JOHNSON CITY, TENN.





U S BOBBIN & SHUTTLE CO.
Dept. A1 Manchester, N. H.

Please Send me the "Story Back of U S HardWear Finish 13D"

Firm _____

Individual _____

Address _____

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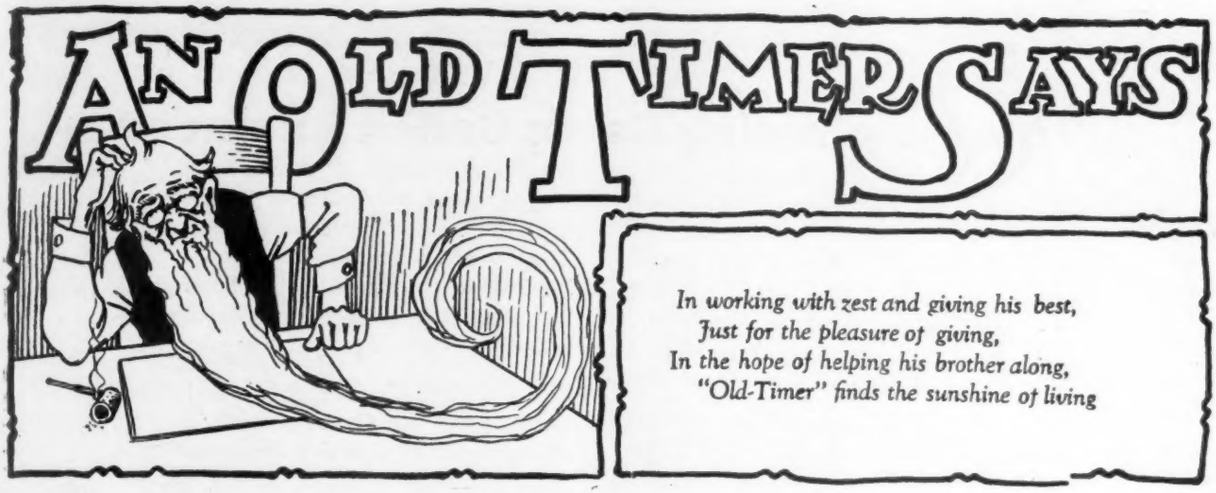
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living

Are You Growing Older While Your Job is Growing Younger?

SOME WISE GUY once said: "Time is the greatest innovator." Now to put that in just plain United States, time is the greatest producer of new things. That of course refers to business, to material things, to your job and to mine, but strange to say, time works on you and me in just the *opposite way.*

Had you ever thought about it that way, Mr. Overseer or Superintendent? What I mean to say is, time makes you and me older while it makes our jobs younger. That is, our jobs are taking on new angles, new methods, new problems to overcome, new competition to meet and new customers who use the product of our labor.

Well, what'cha gonna do about it? That's the big question, the big problem you and I must face; are already facing today, old pal.

I say what are you going to do about it? No, I do not mean what are you *going* to do about it, but what are you *doing?*

Is time making you older while at the same time your job is growing younger? Here's the answer:

If you have got the grit to apply yourself to keeping abreast of the changing conditions, old man Time is bringing about, and will always be bringing about, as long as this old world stands—

If you are studying your job—

If you are keeping up with what the most expert overseers and superintendents are doing by not only reading the textile magazines but by studying them—

If you are taking an active part in those discussions, asking questions, answering questions—

For only by discussing your business, your job, with other people, are you able to get new ideas and to create new ideas in your own mind.

Don't forget it is ideas you are being paid for—not physical labor.

If you are not applying new remedies to your job, then you may expect new evils.

No, you can't stand still.

If you are patting yourself on the back because the job is humming along nicely with good production and a low cost and no kick coming from the boss—

Look out, boy!

Old Man Time is piling up things (new conditions) on you just like the creek used to back up when we made a dirt dam across it to "go in washing" when we were boys. Then when we came out we would sit down and see the water begin to creep over the top of that dirt dam until all at once the whole thing gave way and the pent-up water went rushing down the creek.

Is the water backing up on you, Mr. Overseer or Superintendent, or are you strengthening that dam by not growing old on your job?

Don't forget: Age, that is, mental age and to a great extent physical age, is a state of the mind. That mind of yours is capable of growing younger instead of growing older.

That most valuable of all personal assets, experience, will keep your mind growing younger. If you will back it up with constructive reading and study.

Why not look up that OLD-TIMER article about, "Who Said a Man is Old At Forty?" (July, 1929, issue, page 1031) and read it again. It will give you the inspiration to forge ahead. It will prove to you the utter fallacy of such a thought as that indicated in the title.

We are in an age where knowledge predominates instead of physical prowess. Just this week I made this remark to my employer about a man in his employ. One of his other men had made the statement that he never saw Mr. So-and-so doing anything much, and I said, "Boss, if that man had both arms and both legs cut off he would still be worth double what you are paying him." And I meant exactly what I said because I come in contact with that man's work and I know his ideas are progressive. He keeps posted on the latest developments in his line of work. He is a young man mentally.

But what I am more interested in right now is whether you, my reader, are sitting still and drifting along with the current, or are you man enough to swim up stream?

This Fascinating Game Called Business

IF there is one inspiring element, more noticeable than another in present-day Business, which lifts it to a more human plane, it is the element of Sport! Not sport as a recreation, diversion or pastime, but sport as a Game. The human game of building men and things to the *service* of man.

Ask any successful business man the game he likes best. Invariably the answer is "My Business." He is *playing the Game*. No little white ball holds his eye so intently; no gun or rod, blue water or trackless sky, call to him so deeply, mentally or physically. The records he breaks are those set by his Budget:—Costs, Sales, Inventory, Turnover. His medals—profits, and the knowledge he has played the game *well*.

It's a Great *Game*—Business! Some weaken, but The Game goes on. Modern Accountancy equips this Business Game, holds the stop-watch of accomplishment and sets the goal ever higher.

ERNST & ERNST

ACCOUNTANTS AND AUDITORS—SYSTEM SERVICE

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BALTIMORE	CLEVELAND	ERIE	JACKSON, MISS.	MILWAUKEE	PORTLAND, ME.	SAN ANTONIO	WASHINGTON
BIRMINGHAM	COLUMBUS	FORT WAYNE	KALAMAZOO	MINNEAPOLIS	PROVIDENCE	SAN FRANCISCO	WHEELING
BOSTON	DALLAS	FORT WORTH	KANSAS CITY	NEW ORLEANS	READING	SEATTLE	WILMINGTON, DEL.
BUFFALO	DAVENPORT	GRAND RAPIDS	LOS ANGELES	NEW YORK	RICHMOND	TAMPA	WINSTON-SALEM
CANTON	DAYTON	HOUSTON	LOUISVILLE	OMAHA	ROCHESTER	TOLEDO	YOUNGSTOWN

RESULTS

When you buy cotton for your mill, you are looking ahead at the finished product which will result.

Different products in different lines require various handlings and preparations, but the final product is what attracts the market.

Whatever your product is, its value is dependent on the cotton used to make it.

MURRAY-HANCOCK processing of any cotton will give a BETTER ULTIMATE PRODUCT.

COTTON GINNING AND COTTON SEED OIL MILL MACHINERY

DALLAS, TEXAS MEMPHIS, TENN. ATLANTA, GEORGIA

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Wants Methods of Inspecting and Grading Ginghams and Colored Goods.

Here is an opportunity to help, if you can give any practical experience and methods in answer to this question.

EDITOR COTTON:

Our system of cloth inspection and grading is, in our opinion, inadequate, and I would like to hear from some men with experience on colored goods about their system.

We make ginghams and inspect the cloth by pulling it over a small table by hand. We have been thinking of installing a folder and folding the cloth and turning through it and inspecting it in this manner.

Here are a few of the questions I am interested in with reference to colored goods:

1. Do you inspect and grade the cloth before or after it passes through the tenter machine?
2. Do you use folders before the cloth is inspected to prepare the cloth for this work?
3. Do you finish the cloth as it is made or as you ship it out? In other words, do you store the cloth in the packing room in the finished state or unfinished state?
4. What system of grading do you use for ginghams or other colored goods?

CONTRIBUTOR No. 4715.

Further Comments on Card Grinding and Setting.

Differences of opinion are expressed here, in commenting upon article in February. What's your practice?

EDITOR COTTON:

In regard to a recent article by "C. R. D. (N. C.)" on card grinding and setting, I would like to say that he has some very good ideas on the subject, but that he has a few with which I disagree.

I disagree with him in regards to backing off the doffer to a full gauge. I would not do that unless the doffer was faced. It seems to me that it should be very evident that if a card will run forward with the stock in the card pulling the wire up to a certain extent, then it is not necessary to back off the doffer to a full gauge. By backing off the doffer, the chances are more doffers and cylinders will be faced on account of someone forgetting the jam-nut is backed off in the opposite direction from the cylinder. On the other hand, so many men don't realize how important it is to leave other jam-nuts backed off and make sure that they are tight. If they are not tight vibration will cause them to come loose, thus causing the card clothing to come in contact with the doffer and cylinder, which will cause many dollars worth of damage.

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Many card grinders, when they have a card faced up, just say they have a card faced up and seldom look for the cause of the facing. They put the grinding rolls on, and then re-set what they believe to be the cause, instead of going over all settings to make sure that everything is as it should be. In a few days it's the same old story again — the same old card is faced up again. It won't take much of this to put a whole room in bad shape, for not only the cards but the entire mill will be affected by the bad work.

Some card grinders in going over a card to find some trouble will find slack cylinder fillet with the life all stretched out of it and the foundation ruined. It is then impossible, on account of the loose fillet, to set to any gauge. To get the card to run again without facing it is necessary to re-clothe it. Sometimes new clothing is put on a card when it should be a new grinder instead.

"C. R. D." stated that the stripping plate is seldom moved after the card is put up. I disagree with him, for I maintain that it should be looked after very closely. If "C. R. D." will go into his mill and take off a few of them and notice where some of them have been eaten off by the cylinder running against it, I believe he will agree with me. If other parts of the card need adjusting why shouldn't the plate be adjusted to keep it from coming into contact with the cylinder?

It is my belief that a good card grinder is the life of a good running mill. He should feel lots of responsibility but lots of them do not. When you point out something wrong to some of them they put up the cry that it's been that way for the past seven years and was that way when they came on the job, so why should they change it?

I also differ with "C. R. D." in regards to the setting of the topping and doffer comb. He states that he sets both on a 10/1000 gauge. I would set on a full 32/1000 gauge. By so doing it is possible to cut down the repair bill, as well as prevent a lot of short fibers from coming out in the sliver. By set-

ting to a full gauge they will remain on the doffer.

Too many card grinders pay too little attention to the upkeep of the cards such as, keeping them lined and level, keeping the comb boxes, cylinder bearings, licker-in bearings, etc., in good shape. The screens should also be given very close attention.

I was recently introduced to a carder as a card grinder, and after looking at me a few minutes the carder replied: "Are you a card grinder, or one of those fellows who thinks because he carries a gauge and 31 wrench in his pocket, moves rollers and sets a few doffers and flats that he is a card grinder?" This little discussion reminded me of a large number of grinders that I know who are getting by on what they did in the past. They have not advanced with the industry.

Many grinders will go to a card and gauge it, find it a little loose or tight, but say, "Oh well, it's been running pretty good that way so I might just as well let it stay as it is." All carders know what they want their cards set to, but they have a lot of trouble getting the grinders to set them as instructed. Too many grinders are too anxious to finish the job in a hurry.

CONTRIBUTOR NO. 4713.

EDITOR COTTON:

In a recent issue of COTTON there appeared an article by "C. R. D. (N. C.)" on card setting which interested me a great deal. I hope it will be in order for me to send in my opinions in regard to this matter.

In setting cards we all know that the card must be prepared for the grinding rolls. Then I would set the doffer traverse roll so that it is possible to hear it when the ear is placed rather close. I would not set it so heavy as to cause any sparks, however,. But when setting the traverse roll to the cylinder, as the cylinder fillet is somewhat coarser than that on the doffer, I would suggest that it be set so as to cause quite a few sparks. Care should be taken here though to see that an equal amount of sparks is made at each point. The length of time required for grinding depends upon the condition of the wire. I have seen some cards that required considerably over 10 hours grinding, while I have seen others that required much less turn out good work.

After grinding the card, I would start in and set the feed plate to a 12/1000 gauge; the licker-in to a 7/1000 gauge; the flats to a 10/1000 gauge; I would then set the mote knife brackets just as close to the feed plate as possible, but not at any angle, after which I would set the bottom knife to a 7/1000 gauge and the top one to a 10/1000 gauge. Now in setting the screens, I would set the first point at the back of the card to a 17/1000 gauge; the middle point to a 29/1000 gauge; and the front point to ¼-inch. The doffer should be set to a 7/1000 gauge.

I have found the aforementioned settings to give good work. I don't believe anyone having trouble could go wrong by giving them a try .

I would like to hear from someone using different settings.

R. J. C. (S. C.)

What "Wash" Thinks About Thick and Thin Places on Slubbers.

Disagrees with gentleman from North Carolina and gives his own reasons for causes of this trouble.

EDITOR COTTON:

I noticed in the January issue of COTTON some suggestions that "HANK G. SPINDLE" had given to a man who was having trouble with thick and thin places coming through on his slubbers. This man said he was making carded yarns and using one-inch cotton.

Some of the reasons "HANK" gave for the cause of this trouble were as follows:

"The trumpets on the cards and drawing may be too large—that is the hole through which the sliver passes—preventing the production of nice smooth sliver." It seems to me that "HANK" should know that the trumpet on any machine will not spoil the work. A large bore will allow bunches to pass through, but the bunches are made from the rolls or machine preceding the trumpet. There is a great deal of difference between thick and thin places and a lumpy sliver.

"Back lash in the gearing of the drawing and on the slubbers might cause this trouble," "HANK" said. But as "HANK" failed to give any reason for the cause of back lash, the inquirer is no better off. That is why I am writing this article. Back lash on drawing is caused by one belt riding the other; by the driving belt being too slack; or by the driving belt being made up of part single and part double belting.

"HANK" went ahead to say that the trouble might be due to the weights on the drawing resting lightly on the bar directly under them. This could not be the trouble, for when the weights rest lightly on the bars, a heavy sliver is the result and not one with thick and thin places in it.

I do not believe the trouble could be broken gears, as intimated by "HANK," because, although broken gears cause light places, it hardly seems possible that gears are broken on all of the drawing frames. A broken gear or two may be found on one head, but it is not often that drawing frames are neglected to the extent of running broken gears on all heads.

Filled flutes or badly worn metallic rolls will not cause thick and thin places about two inches apart. Either of these defects will make a cut web, but the defect will be found in every inch of the strand.

I must disagree with "HANK" again. I do not believe this man's trouble is due to any lack of oil because a dry roll will run for hours and make a hard bobbin. This bobbin will be unfit to use but will be minus thick and thin places.

Ball bearing rolls will not help. "HANK" should know that solid rolls are just as good as ball bearing rolls.

Well, then, what causes thick and thin places on slubbers?

It is possible that the trouble may be in the setting of the rolls on the slubber.

This man stated that there might be other processes where the same trouble is occurring but that it is noted only on the slubber. Well, I am willing to gamble that the trouble is at the finished drawing frame or on the slubber. However, let us go back to

the card. Let us assume that a few cards are causing a cut sliver, say only ⅛-inch in length. When we take into consideration the draft on the drawings and slubber, which gives a total draft of at least 144 inches, we realize that it is impossible for the trouble to be at the card.

In considering the breaker drawing, let us assume that thick and thin places are caused here. The draft of the finished drawing, which is about six, and the draft of the slubber will make a total draft of about 24 inches, which makes it impossible for the trouble to be here.

Let us next consider the finished drawing. From the card to the finished drawing we have at least 36 doublings, which is enough to remedy many, if not all defective places. Now assuming that both driving belts of the breaker and finisher drawing are on the same pulley, and that at times one belt rides the other; or that the driving belt is too slack; or that the driving belt consists of single and double belting—here we have three evils, any one of which will cause what is termed "chatter." Owing to the speed of the first and second top rolls, chatter will cause both of these rolls to change their position. That is, these rolls will in revolving occupy the working area of the journal instead of resting on the forward side of the journal.

I would now like for the reader to try to picture in his mind what takes place under these rolls in case of chatter. There can be only one result—the action of these rolls will change the number of fibers in the cross-section of the strand. In other words, these rolls changing their forward and backward position, allows a greater space between them and this allows the second roll to lose its grip on the slivers for a fractional part of a second, thus giving the front roll an opportunity during that time to pluck a few extra fibers. This gives a dual operation between these two rolls, which causes a different number of fibers in the cross-section of the strand. Naturally, we have thick and thin places.

Now let us consider draft, and assume that we have a draft of six on the drawing. All practical men know that the figured draft is never attained on any machine, due mainly to the following reasons: the setting of the rolls; peculiarity of the raw stock; and frictional contact. Rolls not properly set will cause a cut web, but not thick and thin places. To cause thick and thin places the action must be intermittent as in the case of chattering rolls.

When rolls are properly set, a change in stock from fluffy to wiry stock, or vice-versa, will cause a cut web, but not thick and thin places.

The writer has experienced thick and thin places many times and in practically every case the trouble was found to be on the finished drawing. In cases of chattering rolls, I found a wide setting of the rolls to be better than a close setting.

WASH (R. I.)

Ever thought of it? The man who spends every darn cent he makes can't put up much of an argument to his employer about how he can save for him.

Wants Method of Skein Inspection.

Whether you feel you have something different, tell us of your method of inspecting skeins for imperfections.

EDITOR COTTON:

We should be pleased to have you secure for the "HOW OTHER MEN MANAGE" department some experiences and opinions as to the most efficient way of inspecting skein yarn for imperfections. We would be very much interested to know of the various methods now being used.

We understand there are a few mills which use a special method of inspecting skein yarn with spools, whereby they are in a position to turn the skein around without any roughening up or interfering with the diamonds. We would be especially interested to have someone describe this.

CONTRIBUTOR NO. 4745.

Straight Wire Card Clothing Versus Knee Wire.

This man gives further results on this interesting subject. Other readers are invited to tell their experiences.

EDITOR COTTON:

A few months ago I sent you the results of some preliminary tests we had conducted on straight wire clothing for cards, and this information was published in the August, 1929, issue of COTTON, on page 1150. Since that I have received requests for further information on the subject, with specific reference to breaking strength, cleanliness, and evenness, and I have conducted several further tests along this line, and am pleased to give my report on them.

As to breaking strength, I will say that there was not a great deal of difference to be found—at least, not enough to warrant an argument over this point. However, our tests seemed to grant the little difference that existed here to the straight wire clothing. We also noticed that the yarn from the straight wire clothing had less variation in breaking strength and that the weighings were more even.

As to cleanliness, after close observation I will have to cast my vote in favor of the straight wire. A look at a handful of strips from the opposing card will reveal very clearly the reason for my decision.

We should ask ourselves the following questions: Why card under great difficulty? Do we card with the knee of the wire or do we card with the points? I am satisfied to answer the latter by saying, the points.

We all probably know that it is necessary to strip the knee wire very often in order to obtain very good work from it, and that upon starting up after stripping the wire begins to clog with stock and the sliver will not come up to its standard weight until the cylinder has filled the points of the wire with the stock. The card then proceeds to do its carding on top of that stock, and I insist that it is this stock remaining on the points of the wire that destroys the chances of the wire paralleling and cleaning the stock as it should.

It is my opinion that the little burrs that the grinding rolls put on the wire play a big part in the clean-

ing of the stock. Otherwise, all that clothing would need would be needle point wire. All carders know that when the small burrs cease to stick the back of our fingers we say that the card is dull and have it ground. Then if a dull card is a hindrance to a card doing its best carding, does the stock staying on the points of the wire not have the same effect on the card?

As to the percentage of strips desired to be taken out, I will say that the same plate setting rule holds good on the straight wire as on the knee wire. The farther away, the more strippings; the closer, the smaller amount we will have. I have found that the straight wire has by far less good stock in the strippings, and a much larger percentage of foreign matter, which shows that the straight wire takes out less good staple and cleans better.

I have also noticed on the subsequent processes that the fly and clearer board waste looked some whiter where the straight wire had been used. I attribute this to the fact that better cleaning must have taken place at the card.

CONTRIBUTOR NO. 4597.

Reducing Consumption of Loom Supplies.

A system of checking and inspecting repairs and parts on looms that reduces shuttle bills and other expenses in the weave room.

EDITOR COTTON:

I firmly believe that any system depends for its effectiveness upon the personnel responsible for its operation. If they believe in the system, they will make it work.

We are blessed in our mill by having a weaving overseer who is extremely interested in the success of the mill and who has that very rare characteristic of really wanting to save money on shuttles and repairs. This overseer conceived the idea of a system which would allow him to systematically check up on his loom fixers after parts had been issued from the supply room. It was his idea that any part of a loom would last in proportion to the accuracy and care with which it is installed. Therefore, when a loom part is issued to a fixer, a check-up form, as shown by Fig. 1, is made out by the overseer and turned over to the head loom fixer.

Then, after the loom fixer has installed the new part he notifies the head loom fixer who makes an inspection to see if the part is properly installed and adjusted. If so, he signs the check-up slip and gives it to the overseer. The overseer then makes his inspection, which is generally several days later, thus allowing time for any undue wear to show up. After the overseer has made his inspection of the job, he too signs the slip and files it so that it is available for the superintendent, who frequently picks slips at random and inspects the installation—especially in the case of shuttles, pickers and picker sticks.

The results of this very simple little system have been wonderful in our estimation. Our shuttle consumption for the year 1927 was 98 per month, whereas for the year 1929 it has been 36 per month. The other loom repair parts have been reduced in about the same proportion. At the end of each week each loom fixer is told exactly how much money has been spent on his section.

Date_____ Loom No._____

Part No. _____

Price_____

O. K. By_____

Date _____

O. K. By_____

A very pleasant by-product of this system is the training our loom fixers get from their more experienced overseer, who, when he makes an inspection and finds a part improperly applied, explains to the fixer the proper way to install the part and thus the fixer has become more proficient.

I might mention that this weave room has produced one mill superintendent and three overseers in four years' time, and that the only loom fixers we have employed, with one exceptoin, were those to take the places made vacant by promotion.

CONTRIBUTOR NO. 4684.

More About Getting the Right Tension on Slubbers.

EDITOR COTTON:

In the November issue of COTTON, "V. T. (GA.)" wanted to know why it is that the ends on a slubber run slack until the bobbin is about half full and then run tight for the rest of the doff. He claimed that all gears were okeh, as they all checked with catalog tables, and, furthermore, that the present hank roving which he is making (.70-hank roving with seven wraps per inch) always gave him good results. Hence his trouble must be unusual.

However, I notice that our friend does not state the size of the slubber. He probably thought that this did not have any bearing on the subject, but I am going to mention it because for the different size frames the company recommends different settings of the cone belt for starting. I wonder if "V. T." has acquired the knowledge of these settings.

Of course most of us know the settings for the common sizes. That is, on a 12x6 frame a 2-inch diameter bobbin is used and the cone belt is positioned 1⅞ inches from the end of the cones. Then an 11x5½

frame uses a bobbin of 1 13/16-inch diameter and, as the bobbin of the 11x5½ frame is 3/16-inch smaller in the barrel than the bobbin of the 12x6 frame, the cone belt is set ⅞-inch from the end of the cones.

However, if our friend finds the foregoing does not apply to his case, I would advise him to look for other mechanical defects. It might be that a badly worn middle top cone shaft bearing causes a slight eccentric motion of the cone, thus resulting in uneven tension on the cone belt until it reaches a point where the eccentric motion is eliminated, probably about half way up the cone.

It has just occurred to me that our friend might be encountering a very common defect—namely, dirty bolsters. If such is the case, I imagine the bolsters are binding the carriage mostly during the longest traverse and this will cause slackening of the ends for that period. Therefore, "V. T." would do well to have all of the spindles running freely in every way, which would assure perfect freedom to the bobbin rail or carriage.

Another item is the condition of both cone drums. Are they worn and therefore not maintaining their true outlines?

Sometimes an untrue builder screw will cause slackening and tightening of the ends. Probably for about half of the doff the builder works freely, but as the builder jaws close the screw begins to bind, thus the long rack will not always be given its full lateral movement at every change.

Possibly the frame of "V. T." is running with a larger tension gear than is necessary for the full doff in order to overcome, if possible, the tight winding when the bobbins are half full.

I believe that if our friend will look over the few defects that I have mentioned he may be able to arrive at the solution of his problem.

D. E. (R. I.)

EDITOR COTTON:

I have had experience on slubbers, and have found the difficulty that "V. T. (GA.)" spoke of in the November, 1929, issue—that of getting the right amount of tension on his slubbers—very common. I have questioned every fitter, as well as others, in regard to this trouble, but have gathered very little information from them.

It is my idea that the idler gear in the swing, which I believe consists of about 60 teeth, is the main cause of the trouble. This is due to the fact that when it gets to a certain position it loses its power.

"V. T." might also be benefited by seeing that his bobbins are of the correct diameter. If we have wrong bobbins and have to start with the cone belt in the wrong position this affects the wind considerably.

I was troubled awhile with slack wind on a certain hank roving on the intermediates and I overcame this by altering the layer.

Then too, "V. T." might give a little attention to his compound gear. He could add one tooth to his compound gear, which, of course, would necessitate his putting two teeth on his tension gear.

Then there is the question of cone belts. We use endless belts, and I find that when they stretch it allows the cone drum to get considerably low, which affects the wind to quite an extent. We have had to make numerous changes on account of this.

Although I am sending this article in some time after the question appeared, I hope that it may prove of value to some of the readers of COTTON. If I have not made myself clear on any point, I will be only too glad to attempt to offer a better explanation.

I certainly enjoyed "OLD-TIMER'S" article "It" in the January issue.

J. W. H. (CANADA).

Proper Drafting and the Use of Waste.

"Wash" gives his views on these two important subjects and asks for the opinions of readers.

EDITOR COTTON:

When constructing and arranging a cotton mill for any specific counts there is one subject, prior to dealing with the construction details, that requires special treatment. It is the arrangement of the drafts in the various machines.

To balance one process with another requires great judgment and a good knowledge of the raw stock and art of drafting. The chief point to keep firmly in mind is to have the shortest draft on the machines having the least number of spindles and the longest drafts (not excessive) on the machines having the most spindles.

Too much faith, as a rule, might be placed in the engineer. Some mill engineers understand how to calculate the draft of any machine in a cotton mill, but very few understand the art of drafting and the manipulation of the cotton fibers. Therefore, I think that it would be advisable for any man placed in charge of building or starting up a mill to seek the advice of a few good carders and spinners before deciding on the number of machines for each department.

The success of a cotton mill depends upon the attention paid to the proper drafting of the machines and to the stock in use. These are two of the most vital matters in the operation of any mill.

It should always be possible to arrange the series of drafts throughout the mill so that each process can keep up with the other, and also have the best theoretical drafts. It must be borne in mind that the chara- are suitable for long staple cotton would not be suitable for short staple cotton. Then too, drafts that are suitable for a fluffy waste cotton would not be suitable for wiry cotton. For instance it is possible to have a long draft with fluffy cotton without causing much frictional contact between the top leather roll and bottom steel roll but with wiry cotton of the same length as that of the fluffy cotton, the strength of the staple would offer much more resistance to the front top roll. This would cause the yarn produced to be uneven, as the action of the front top leather roll would be intermittent instead of gradual, and in the process of drafting the fibers are drawn past one another and the uniformity of the roving or thread depends on the grip the second top leather roll retains on the fibers, as well as on the freedom of the front top leather roll.

Therefore, when equipped with leather rolls, it is not advisable to have a long draft on the drawings due to the fact that the frictional contact between the front top leather roll and the bottom steel roll is greater on these machines than on any others. The reason for this is because the leather rolls of this machine act on such a large number of fibers at one time.

To prove that the foregoing should be carefully considered by all carders I will give the following draft, which is the draft between the front rolls and calender rolls—the figures are taken from a builder's catalog: $16 \times 30 \times 24 \div 24 \times 45 \times 11 = .969$. I need not point out here that such a draft, that is a draft of less than one, is only possible when leather rolls are used. We never get a draft of less than one when using metallic rolls, which goes to prove that the frictional contact between the front top leather roll and bottom steel roll on all drawing frames is very great. Then, when the top roll lags behind the surface speed of the bottom steel roll, the action is intermittent and the strand is not uniform.

Many carders in order to please the superintendent will agree to run waste. Waste, as a rule, will run best with fluffy cotton when only frictional contact is considered.

Assuming that we are running metallic rolls and that the web between the front drawing rolls and calender rolls is perfect, let us make a few observations.

If we set the second rolls closer to the front rolls we find that this causes more tension on the web. Then, on the other hand, if we set the second rolls at a greater distance from the front rolls, we notice that a very slack web is the result.

Although the metallic rolls are positive ,they do not prevent many fibers from escaping the full action of the second rolls. As most carders know, or rather should know, the working area of these rolls is only on the collars, and a space exists at the meshing point which of course is very desirable. However, owing to the meshing being done only on the side of the rolls, many fibers escape. This is especially true when the rolls are set too great a distance from the front rolls. In such a case, the front rolls are plucking many fibers not held by the second rolls and a slack web is produced.

Yet, when the rolls are set too close, the second rolls offer more resistance and then what occurred on the second rolls occurs on the front rolls. That is, many fibers are not gripped as they should be and a little lagging takes place which causes a tighter web. This is one of the greatest evils in cotton manufacturing for it causes the strand of finished drawing to have more fibers in its cross section at some places than at others.

I would now like for my readers to picture in their minds, if they can, what happens when waste is mixed with raw stock, and to also keep in mind that waste is called such because it has lost its waxy walls; in other words, the life is out of it. What do we see when these fibers are placed under the action of the drawing rolls, along with those of the raw stock? We see uneven webs, tight on one side and slack on the other, which, as has been explained, is a very great evil. Hence, I think it would be a good idea for us to ask ourselves the question, is there any advantage to be gained in running waste in cotton?

Without waste in the raw stock we can run all machines at a greater speed, which means a larger production and I am sure that we all realize that an increase in production means a decrease in the cost per pound. When waste is run it is necessary to increase the twist, which of course reduces production thus increasing the cost per pound.

Next, we know that the action of the drawing on the waste fibers is different from that on the fibers of the raw stock, which of course, means uneven roving and yarn.

The weakness of the yarn which causes breakage at the spinning, spooling, warping and weaving should be given serious consideration. Waste destroys the relationship of the cones to the flyers on fly frames. No mill man will deny that waste makes waste.

Now the question that gives the essence of my article is: When a box of waste is dumped into the automatic feeder is it a gain or loss in efficiency and money for the mill?

I would certainly like to hear from some others along this same line.

WASH (R. I.)

Qualifications of the Foreman.

People will work hard for a man who treats them fairly, who runs his own job and always is cheerful.

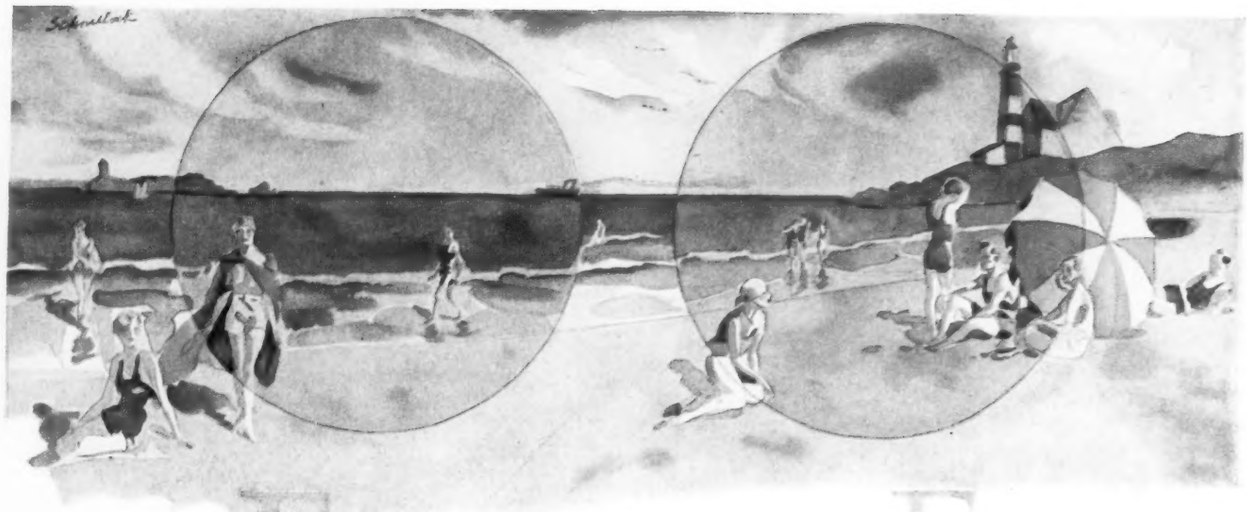
EDITOR COTTON:

Although I can hardly be classed a regular contributor to your magazine, I would like to take advantage of this opportunity to become initiated by sending in some comments on an article that appeared in the December 1929 issue. The article entitled, "Selecting the New Foreman," was written by "X. Y. X. (GA.)" and was in my estimation a very good article. Most of his ideas are heartily in accord with my own.

During my fifteen years experience as foreman of different spinning and twisting departments I have had the opportunity to pass judgment on the capabilities of quite a few young men. Upon the discovery of a boy that I consider the possessor of an exceptionally bright future, the first place that I try him is in the position of head doffer. If he makes good, I then try to get him in line for the position of section man, for, as a section man, he is given an opportunity to show his real worth as a foreman. If he has it in him it will show up.

There has been quite a bit of discussion concerning the college man in the mill. I believe that college men may make successful superintendents, but not foremen. Because of the environment they have been used to, they lack the sympathy that a foreman should have.

I realize that all of us are human beings and that we all endure times when it is extremely difficult for us to hold our chins up and smile. However, regardless of the break, if we will smille at them all, I am sure that we will all find that the road to success is not quite as rough as we had thought it to be and that many of



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Science says the cool yellow and green rays of the spectrum are the rays by which we see best. The remarkable seeing power of Cooper Hewitt light is accounted for by the composition of its spectrum — over 90% yellow-green.

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Little wonder then that in industries where efficiency is the watchword — where vision must be keen and quick — and where the comfort of workers is rightfully considered important — Cooper Hewitt light is everywhere in use. Most of the leading automobile plants are lighted with Cooper Hewitt lamps. So are the mechanical departments in many of the leading newspapers. Likewise, the big furniture factories, textile mills, etc.

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It will interest you to learn the many advantages — in the use of Cooper Hewitt illumination. A new illustrated booklet, "Why Cooper Hewitt Light is Better than Daylight," is yours for the asking. General Electric Vapor Lamp Co., Hoboken, N. J.

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[See next page]

where WOULD *you go to thread a needle?*

In an exaggerated circumstance—say, when you thread a needle—you recognize instantly the importance of both the adequacy and the direction of light. And just so does light play its part in your industrial plant.

. — .

Poor lighting annually exacts a tremendous toll from American industry. It is responsible for a high percentage of the "seconds" turned out in every plant. It is the direct cause of innumerable mistakes all along the production line, wasting materials, wasting time, wasting profits.

. — .

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. — .

Only 15 per cent of America's industrial plants are adequately and properly lighted. In these, accidents are comparatively few, seconds run low and production is high.

. — .

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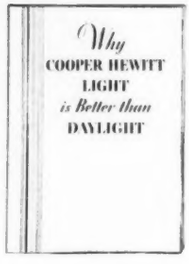
. — .

The remaining 56 per cent of all industrial plants are classed as poorly lighted. And in these, investigation has shown, the accident rate is high, the percentage of seconds is high and production is lowest.

. — .

Cooper Hewitt mercury-vapor light, as some thirty different industries in America have discovered, is *the* light that "gets the industrial needle threaded." Some reasons why it helps reduce waste to a minimum, improves quality, and increases efficiency and profits generally are given on the opposite side of this page. Many of the reasons are simply explained in the new illustrated booklet, "Why Cooper Hewitt light is Better than Daylight." Free for the asking. Address: General Electric Vapor Lamp Co., 853 Adams St., Hoboken, N. J.



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those we had heretofore thought of as being our enemies are, in reality, our most sincere friends.

All foremen should command the utmost respect from their help. They should not be as many foremen that I know—that is have one set of rules one day and the next day abandon those rules due to something rather exceptional taking place. All foremen should, as far as is practically possible, strive to be the same day in and day out.

We have all heard of the superintendents who put men on good jobs just because they are good friends. Such superintendents should lose their jobs and the chances are that they will sooner or later—most likely sooner.

I am sure that most mill men realize the difficulty of keeping good help on the payroll all of the time to run any mill. I really believe that we have less labor turn-over than any mill that I know of, and I believe it is all due to the fact that every one of our executives has the interest of the operatives at heart.

Of course there are some people that are very easily spoiled by a little decent treatment, and for this reason the foreman must be a rather keen student of human nature. My idea of a real foreman is one that can mix with the operatives, yet command their utmost respect; one that can lead, not drive; and one that can always hold his chin up and smile.

CONTRIBUTOR NO. 4695.

The Self-Acting Spinning Mule.

EDITOR COTTON:

Sometime ago one of our friends created some little interest concerning self-acting spinning mules, by asking a question about the winding roller delivery motion, which I did my little best to answer satisfactorily.

Remembering this, and being somewhat interested in this fast disappearing, though surely, to my mind, the best means of spinning yarns, I thought perhaps there must be at least a few of our friends who will undoubtedly welcome some other topic, concerning self-acting mules. Therefore, in this letter I want to say my little piece about what I think an important subject, namely, twisting on mules.

Truly speaking, I would be greatly pleased if we could have some interesting argument on mules, from time to time, in these pages, just as a kind of revival of the real good spinning days when mule spinners of my acquaintance never ceased to discuss the machines by which they earned their bread.

Those fellows launched forth with their heart and soul to produce the best, and we got it in those days. The foregoing, of course, is only by the way, though I could if required, relate some extensive stories of the times when these men discussed nothing else but "my mules."

At the present time, I think nearly everyone will agree, we do not encounter so much enthusiasm among operating executives in any branch of the trade.

However, I mentioned at the beginning that I would deal with twisting on mules, so this must call for a little treatise on twisting motions, as used on these machines.

Twist motions on mules, as far as I know, are of two distinct types, and the various makers use their own constructional ideas in the arrangement of same.

One type of motion is that driven from the rim shaft, and the other type is driven from the tin-roller or cylinder shaft.

Most of our friends interested in mules are probably acquainted with the fact that these motions are always constructed, as well as operated, upon the principles of the measuring motions as used to be applied to speeders and other machines.

These measuring motions consisted of worm gear arrangements driven from the front roll, and when the latter had made a specified number of revolutions, a eumbler was made to release the belt fork or shipper, and a given length of roving would have been wound on each bobbin.

Here let it be understood that the twisting motion is very closely related to the speed gear mechanism.

Mules which usually produce yarn from American cotton have the twist regulated by the speed gear, regardless of alterations of the rim or tin-roller pulleys.

Where the finer numbers are being spun by mules from Sea-Island or good Egyptian stock, the total twist per inch is solely governed by the twist gear.

This item must be clearly understood at the beginning.

Now suppose we have a mule, spinning say just ordinary numbers from American cotton, either warp or filling, and it is desired to change from 30s to 36s. Of course it is easily understood that 36s will require more turns per inch than will the 30s, and this is, by the way, increase in the proportion of $\sqrt{}$ 30s is to $\sqrt{}$36s.

In these cases we should obtain increased amount of twist in the yarn by increasing the size of the speed gear, the effect being the reduction of the carriage and roller speeds.

In other words, increasing the time required to make one outward run of the carriage without changing the speed of the spindles, enabling the latter to put more twist into the yarn.

On all such mules there is not any twisting accomplished at the termination of the outward run and "backing-off" occurs immediately the carriage reaches the end of the "stretch."

So I hope that in the foregoing case it will be understood that the speed gear can be described as the twist gear.

Of course for the spinning of the aforementioned yarns, there is only a slight amount of carriage draft required, and there is no objection to putting in all the twist during the outward travel of the carriage.

The latter, however, owing to a slower carriage speed, facilitates piecing up and promotes better spinning.

However, when we are spinning finer yarns, a considerable amount of carriage draft or gain is required, and also, different circumstances are to be contended with in this connection. This gain, or second "streteh",

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occurring at the end of the outward run, helps to improve the evenness of the yarn, though of course improvements of recent years in the production of roving lessens the importance of the extra draft to some extent.

In allowing the aforementioned "gain" to function in the spinning of fine yarns without breaking the ends or threads, it is usually found necessary only to insert a proportion of the twist during the outward run, and then finish the whole standard turns per inch as the carriage is gaining that extra draft as the termination of its outward run, or, as old spinners would say, "when she is on the catch."

In some cases about one-third of the total twist is put into the yarn during this "supplementary twisting action" as it is called, and to control this twisting process we must have a motion in addition to the speed gear mechanism.

The speed gear can be altered in the same way to regulate the amount of twist put in as the carriage moves outward, but still it cannot be truly termed the twist gear in this connection, since it will not in such cases control the total amount of twist inserted in the yarn.

Of course when we apply a smaller driven speed gear the carriage moves out more quickly, and eventually a less amount of turns per inch are inserted, though just as much twist as was lost during the outward run would be compensated for as the carriage completes its run.

Our friends, however, will probably understand that in mules which have twist motions attached there are two gears which decidedly affect the turns per inch, each of course, in different ways.

The speed gear regulates the proportion of twist inserted during the outward travel and the twist gear controls the total amount of twist inserted during one complete "stretch," including the extra draft, or, strictly speaking, it controls the finished twist per inch.

The simplest motion with which the writer is acquainted, was used by Dobson and Barlows. Its construction was made up of a single worm on the extreme end of the main shaft, which drives a worm gear on a short shaft, on the end of which is fitted a releasing catch or tumbler.

The worm gear is the change gear for twist, and a larger gear which takes longer to make one revolution permits more twist to be inserted before releasing the belt fork.

Perhaps the best way to illustrate this would be to look up an old examination question, relating to same, and undoubtedly our friends will clearly understand.

First of all, in order to understand this twist motion calculation, it is necessary to realize that it is based upon the fact that two sets of conditions each equal the total revolutions of the spindles during one outward run of the carriage, and then it will be seen that we can always create a simple equation so as to find any one missing term.

The following example is one I have found among some old examination questions, namely, a mule winds on the cop 63 inches in one draw; the rim shaft makes one revolution, to twelve revolutions of the spindle, and we wish to insert 20 turns per inch in the yarn. What number of teeth do we require in the twist gear?

In this case $63 \times 20 = 1260$ revolutions of spindles per "stretch" or draw, and the revolutions of the rim shaft per draw $\times$ revolutions of the spindle for one of the rim shaft $= 1260$ simply because the twist gear and catch, or tumbler, make one revolution per draw, and the number of teeth in the twist gear must equal the revolutions of the rim shaft per draw, which we will call X.

$$\text{Hence } 63 \times 20 = \frac{3}{} \times 12$$

$$= 63 \times 20$$

$$X \frac{}{12} = 105$$

which are the revolutions of the rim shaft, and therefore equal the teeth in the twist gear. However, it will be seen now that in working mule twist gear calculations, the basis of the mule always depends upon the fact that turns of spindle for one of rim or tin roller $\times$ revolutions of rim or tin roller per draw = turns per draw and also equals the length of draw $\times$ twists per inch.

Going a little further into the subject, I will try to dwell a little on another type of twist motion as applied to the tin-roller.

The twist motion as applied to the rim shaft does not make any allowance for the rim band or spindle slippage. However, several years ago it was discovered that the twist motion could be modified so as to allow in the twist for any slippage or variation in the slippage of the rim-band, although the slippage of the spindle bands could not be touched.

In the average mule the writer does not know of any method of checking the variation on spindle band slippage, though better results are obtained by insisting upon having the bands tied on at about the same tension and by one certain operative.

Slippage of the rim-band being one cause of variation in twist is overcome in mules spinning fine yarns by the use of a twist motion attached to the roller shaft, instead of the rim shaft.

The driving worm in connection with the said motion is fitted on the tin roller-shaft, and this being so, it follows that any occurrence of rim-band slippage not only affects the spindles, but equally affects the twist motion, and does not reduce or vary the amount of twist inserted.

On mules fitted with the tin-roller twisting motion, the twist catch is hinged on to the back of the head stock, and attached by a long rod to a bell crank lever centered in the headstock side at the front.

A bracket is fitted on the carriage square, and this carries the three motion gears. On the tin roller-shaft is a single worm, which drives a gear about 40 teeth, or the same stud being a 20 gear. The 20's drives the twist gear, which carries around with it a catch or finger which after one revolution depresses the bell crank lever, and by means of the long rod releases the belt fork lever at the back of the headstock.

This, however, closes my remarks on the mule

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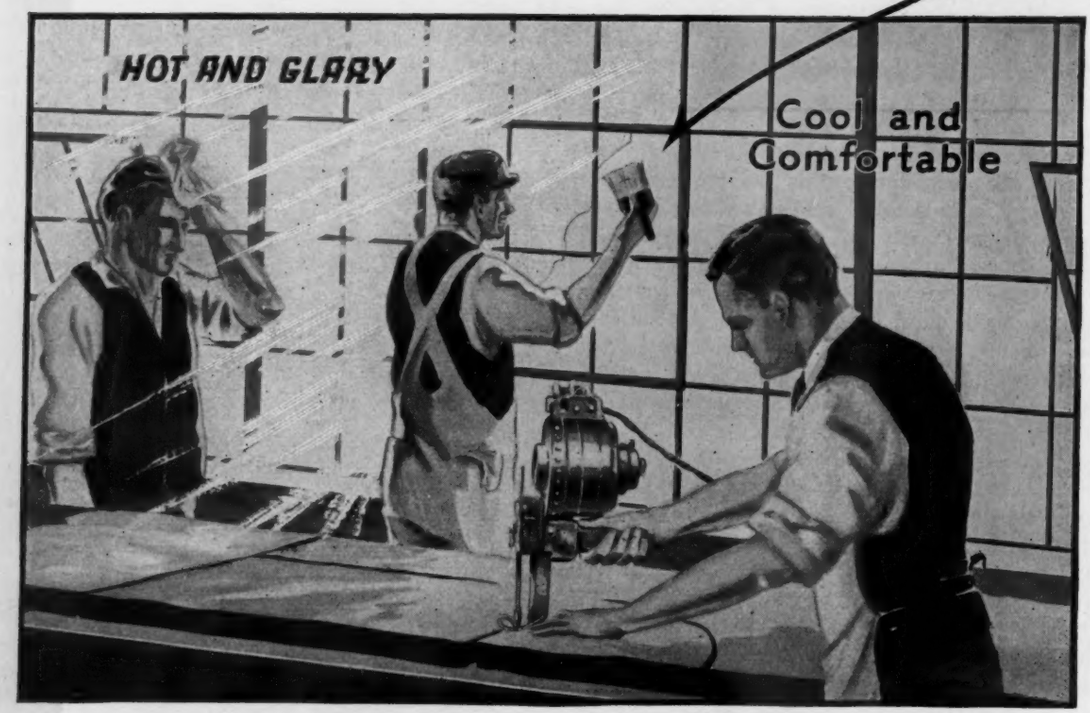

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twisting motion, and as I mentioned previously, I would be very much pleased if someone of our numerous friends in this department would look up some topic on mules, remembering as was recently stated in the columns, that good stuff is never old stuff.

D. E. (R. I.)

Bleaching Cotton Yarn.

EDITOR COTTON:

While visiting my friend Tom, who is at the head of the bleaching and dyeing department in a modern finishing plant, I was very much interested in a method he gave me for bleaching cotton yarn. Thinking that it might be of interest to some of the readers of COTTON, I am sending it to you for publication if you think it worthwhile.

The method Tom gave me is as follows:

For the pressure kier boil, 20 twaddle caustic, 10 pounds of soda ash and 10 pounds of chipped soap should be used. The solution should then be kier boiled for six hours under pressure, then the steam cut off and continued circulation allowed to take place for two hours.

Remove all pressure and backwash with cold water until the kier runs cold. Backwash until water contains no alkali when tested with litmus. Drain kier, and if link marks show, leave yarn in and kier boil again for four more hours.

In preparing chlorine, use 100 pounds of flake caustic and 100 pounds of soda ash, dissolve in a small quantity of water in making up kier, then pump into chlorine preparing tank. Run in cold water until within one foot of the top of tank, then introduce 100 pounds of chlorine, taking approximately 12 hours to do so.

The strength of the outside chlorine in storage tank should be 22 grams per liter. Then this should be pumped into bleaching wells and reduced to 1¾ grams per liter—the tests being made by normal solution.

Take yarn from kier, plaited in dry bleach wells and cover with burlap. Spray chlorine solution over yarn and allow to remain 40 minutes after yarn is covered. Then pump the liquor off and with yarn plaited in the next pit repeat the same operation. Next, give the yarn eight cold washes in the same pit, being sure each wash is entirely emptied before starting the next. Test the last wash for chlorine with starch iodide paper—the paper will turn blue if chlorine is present.

Plait into sour pit of ½ per cent sulphuric acid solution and allow to remain for 15 minutes. Drain off and give it eight cold washes, being sure each wash is entirely drained off before starting the next. Test the final draining with litmus to be sure the acid is all gone. Then sodium bi-sulphide should be used, the amount used being governed by the quantity of yarn.

Softener.

For warps in first box use one per cent solution of white chip soap at 160 degrees. The second box should contain clear water at 120 degrees, having a slight flow to take off soap. Then in the third box, which should be a standing bath at 100 to 110 degrees,

All of us in the* COTTON *Business should help . . . . Women and children are wearing cottons for all occasions. Cotton towels, sheets and pillow cases, blankets, slip covers, bedspreads, curtains, draperies and many other cotton articles are found in the homes of today . . But cotton should be used in greater volume in many other ways, and every person in the cotton industry can help increase these other uses . . ***Men*** should wear more cottons—cotton neckties, shirts, underwear, bathrobes, pajamas, socks, golf hose, rain coats, sport clothes and summer business suits . . Specify cotton in preference to any other fibre wherever possible, be it a factory belt or a road marker. Buy your sugar, flour or cement bagged in cotton. See that cotton towels are used in the public washrooms of your community. Every use you make of cotton will help to bring greater prosperity to the whole cotton industry . . If you have any suggestions, ideas, or problems on increasing cotton consumption, New Uses Section of the Institute will be glad to work with you.

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200 lbs. of AA Softener should be added at the beginning of the bath and 25 pounds added for each additional run. The warps should then be dried at a temperature of about 160 degrees. They should not be dried out completely however, but a little moisture left in them.

For skeins, 50 lbs. of AA Softener should be added to the starting bath and 10 lbs. added for each additional batch of 50 to 80 lbs. The skeins should then be dried at a temperature of 160 degrees and a slight trace of moisture left in the yarn. If they are too damp they should be allowed to dry on the truck.

Method for Testing Bleach.

Take 10 c.c. of bleach solution, add 10 c.c. of sodium iodide solution and sulphuric acid solution, then dilute to about 400 c.c. Titrate with normal thio-sulphate solution until the yellow color is just destroyed. Each c.c. of thio-sulphate solution used is equal to 355 grams per liter.

To make a normal thio-sulphate solution, dissolve 24.8 grams of crystal sodium thio-sulphate in exactly 1000 c.c. of water. The sodium iodide solution consists of five grams of sodium iodide in 100 c.c. of water. The sulphuric acid solution is made up of 5 grams of sulphuric acid in 100 c.c. of water.

MACK (N. C.)

A Practical Man's Opinion of Textile Graduates.

EDITOR COTTON:

I have been a reader of COTTON since before "OLD TIMER" and his whiskers began to appear in its pages, and if I had lived up to "OLD TIMER'S" teachings, I am sure that I would have been higher than I am now. However, I have gotten great benefit from "OLD TIMER'S" articles and from COTTON as a whole.

From time to time, there has been quite a bit of discussion as to which should be promoted in the mills: the textile graduate or the practical man. As one who came up by the broom-handle route to overseer of carding, over a period of 15 years, I want to say a few words in favor of the textile graduate.

I will be honest enough to tell you that a few years ago I was prejudiced against the textile graduate. I didn't think that his "book larnin'" could begin to compete with my practical knowledge, but since I had the pleasure of working under a textile graduate for two years, my picture of the proposition has changed. I had the textile graduate pictured in my mind as the president's or manager's son who was furnished with plenty of spending money and sent to college for four years to have a good time. But I have found that to be entirely wrong. I find that the young men who go to college are, in most cases, sons of mill men who have worked their way up from humble beginnings, and that their sons have inherited the good qualities from their fathers. And most of them have worked in the mills during vacations. I also used to think that the textile graduate was big-headed, overbearing and unreasonable, and I find this to be entirely wrong. I have never seen a superintendent who takes more interest in the welfare of his employees than does this graduate that I have in mind. He always has time to listen to the troubles of the humblest operative or anyone else, and in most cases gives an intelligent answer. And I thought that all he knew would be to sit in the office and figure production and then raise the devil if it didn't come through, but I find that he goes through the mill and if there is anything that will hinder production he will find it and help eliminate it in the right way, if it is at all possible, and if he sees a picker or a card or a loom or any other machine not putting out the right quality, he can usually tell what to do to remedy the trouble.

He also takes an interest in the recreation and social activities of the people, and he rapidly won their good will. He taught a night school during the fall and winter months and took great interest in teaching it, no matter how illiterate some of the people might have been. And if any of his employees had an example too hard for them, he would always take pleasuse in working and explaining it for them. I have known the employees to have business letters, and not knowing how to answer them would ask the superintendent, and he would take the trouble to typewrite the answers for them. And he always has inquired about the sick employees and the ones that he noticed were not on their regular jobs.

These little things may look unimportant, but to my mind they go a long way toward properly running a job.

I find that the graduate has a broad mind and can grasp new ideas and changes where some of us practical men at times condemn a good idea or change before giving it a thorough investigation. Of course every graduate doesn't make good, but I think if we read the textile journals and see the demand that there is for textile graduates, and note that some of them are fast climbing to the top in the Southern Textile Industry, we will realize that some of us fellows in the mill will have to get busy.

At the same time, I still believe that the young man in the mill has the advantage if he will put forth the effort. But, while the graduate is in college, the mill boy must be at home or at night school studying and reading everything he can get his hands on that pertains to textiles, instead of going to shows, joy riding and participating in other amusements. If we fail to to this, I don't think we should envy the graduate when he is promoted over us, or criticize him. These things don't just happen. Competition is too keen for the mills to put men in responsible positions unless they can deliver the goods.

My advice to the boys in the mill is to get every bit of practical knowledge that they can in the mill, and all the technical knowledge at home and at night school that it is possible for them to secure, and to study human nature and get a broader view of the world and its affairs. Then, he will be better able to compete with the graduate when the good job comes open.

And, when the graduate comes into the mill with us, we should give him all the help that we can, and I think, in fact I know, that we will find that they are glad to help us, and we will also learn that we receive more than we give.

CONTRIBUTOR NO. 4647.

Suggestions on Making Even Yarn.

EDITOR COTTON:

We hear much these days in regard to uneven yarns, so I am prompted to try to write an article upon this most important subject, and will start in with the opening room.

I know there are many methods of opening and mixing, in these days, but I will state frankly, and no doubt will be called an old-timer for so doing, that I do not believe, with all of our patented methods of opening and mixing, there is a one of them that will beat the opening and mixing by hand, where we have the room to do it; say, to open anywhere from 20 to 100 bales at a time (the more, the better).

First, get all this cotton in the opening room. Take the ties, tags and bagging off the bales the evening before. On the following day we start our mixing by taking a layer from one bale and spreading it evenly all along the mixing room, on the floor. We then go to the next bale, take the same amount off of it and spread it evenly on top of the layer from the first bale, and so on down the line until we have a layer from each bale. Then we go back to the first bale and do exactly as we did at the start. We keep this process up until we have all the cotton mixed, and we are sure of an even mix and an even blend of color and staple. When we are ready to feed this cotton into the hopper, we take the cotton from one end of the pile, starting at the top, and going from this end to the other in like manner. In this way, we know that we can get an even mixing, and in no other way can it be done.

In the opening room, we lay the foundation for either even or uneven yarn.

In the Picker Room.

This brings us to the picker room. Here we should watch the hopper to see that it does not run too low, and at the same time, should never allow the cotton to be packed into the automatic feed box, but it should be kept about two-thirds full at all times. All the picker machines should be kept well oiled and well cleaned. It should be seen that the rolls are set to receive the length of staple being run, keeping all the evener belts at the right tension and working freely; seeing that all gears are properly set and the worn-out ones replaced with new ones; keeping the right beater speed for the staple of cotton. It should have the right number of beats per inch, but at the same time, should not be beaten to death.

Four laps should be kept on the feed apron at all times, never allowing a lap to run out and run several minutes before being replaced with another lap. I do not believe that the laps on the finisher should exceed 12 ounces to the yard. I believe in a long light lap, so it can be carded more perfectly. I do not like a short, heavy lap under any condition. All aprons should be kept in good condition and working freely. The measuring gears should be well set up and not worn out. Care should be taken to see that the eveners are working properly and the evener belt shifts freely on the cones.

I want to say, if we are to get good even work, our foundation is in the opening and picking room, for

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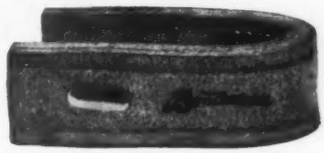

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if any unevenness gets by the picker, "she is gone." All that we can do at the other processes, throughout the mill, can not catch it and even it up, so therefore, I say, watch these two rooms at all times for good, even-running work, never allowing the finished laps to vary over one-half pound either way. Say, if we are making a 39-pound lap, keep within 38½ to 39½ pounds. If ¼-pound can be allowed each way, so much the better.

It should be seen that the air currents are working, so that an even sheet of lap will be distributed from one of the screens to the other, and that the grid-bars are properly set, so that the impurities will go through them. Going on to the next process, I want to emphasize the necessity of watching the opening and picking processes for securing even yarns.

Now the Card.

We now take up the card, another important machine. Like the picker, these should be kept well cleaned and oiled. A good grinder should be secured, and paid to look after his card. If we pay them sufficiently, we can get them to keep the cards sharp at all times and well set up, so that each part will function as it should. When placing new laps on the card, it should be seen that it is pieced up about one-half inch of where the lap was broken off. In this way of laying down laps it will be found that there are no thin and thick places in the sliver at the front of the card.

All of the stripping plates should be set the same, so that each card will take out the same amount of toppings. See that all cards are stripped clean at each stripping and the coiler heads are putting the slivers in the cans properly so that they will not be stretched when the cans begin to fill up. See that all piecings at the front of the card are evenly pieced together when the stripping is being done. Be sure to allow the card to fill up before putting up the end. Do not allow the cans to become too full before doffing them, as this will stretch the sliver and cause it to run too light. The cards should never be allowed to be cleaned with a broom or flapped off with a burlap flap, but the front of the cards should be kept wiped clean with card strips, never allowing the sliver to accumulate under the doffer or on the floor. The fly and motes should be kept from under the cards and the tops, flats, doffer and cylinder kept sharp at all times and set according to the stock being used.

The Drawing Frames Next.

We now come to the machine called "a machine built for a fool to run." How many times have the readers heard that remark? And I am sorry to say that sometimes it has been made by supposedly good mill men. To my way of thinking, the drawing frame is one of the most important machines in yarn manufacturing. Put a good, dependable man on drawing and keep him there, for this machine bears watching every second of the day. Like all of the other machines, it must be kept well cleaned and oiled. The clearers should be kept clean at all times; also the rolls, both top and bottom.

Now as we begin to come to the rollers, what has been said concerning one machine in regard to top and bottom rollers, will apply to each machine throughout the mill. Of course we do not mean that the bottom steel rolls or the slubbers and speeders should be taken out as often as those of the drawing frame, for one drawing frame should be taken down each week and cleaned thoroughly.

As to steel rolls, stands, calender rolls, etc., it should be seen that all knock-off motions are working freely, and not hanging up when a sliver runs out at the back or an end breaks down at the front of the machine. See that each coiler head is working freely and each can is filling up at the same time, and that the machine knocks off when the proper amount of sliver is in the cans, for running too full will cause the sliver to be stretched and cause light work. See that the turn-tables are set properly and turning freely when piecing up an end at the back of the machine. Piece it exactly with the end going through; do not lap it on top of the end that is running out, or do not allow the end to go through for several inches before piecing it. If it does happen to get by, go to the front of the machine and take it out of the can. I believe that cans of different amounts of sliver should be set in at the back of the frame, and not a creel of full cans set in at one time, for if we set in a full set at one time it will not have the same pull on the slivers when full that it will when the cans are two-thirds empty. Set in some full, some half full and some one-third full, and so on. In this way, it will keep the sliver at the front more even, keep the machines drafted to suit the stock being run and also keep the rolls set for the stock, so with the proper draft, and the rolls properly set, there will be a good, smooth, even sliver, and evenness is what is desired.

Remember always, that the drawing is one process that can not be watched too closely. There is no danger of getting a man who is too good to run those machines. If running leather top rolls, they should be kept varnished with a good varnish, with the proper amount of weight on them.

Fly Frames.

We will next take up the slubber, intermediate, roving frames and jack, as they all come under very nearly the same heading. It is necessary to watch these machines very closely, keeping both top and bottom clearers clean, and the frames clean at all times and well oiled; seeing that the gears are well set and that no bobbin gears are jumping, thus causing the coils to override each other.

Spindles should be oiled twice a week, on Mondays and Thursdays; the front steel rolls kept clean with a good cup grease in the stand, seeing that the proper lay and tension gears are on the frames and that the right size builder gear is used to build a nice level bobbin.

When creeling the slubber, it is best to creel on the doff and piece the slivers well, picking the flyers on each doff, and never allowing the frames to be fanned off. The guides should be kept wiped clean. It is best to do this on the doff also. It should be seen that the roving or sliver trumpets are not filled

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THERE is one point in production usually overlooked which determines whether there will be trouble later on at the loom. This point is reached when the yarn is drawn off the spool.

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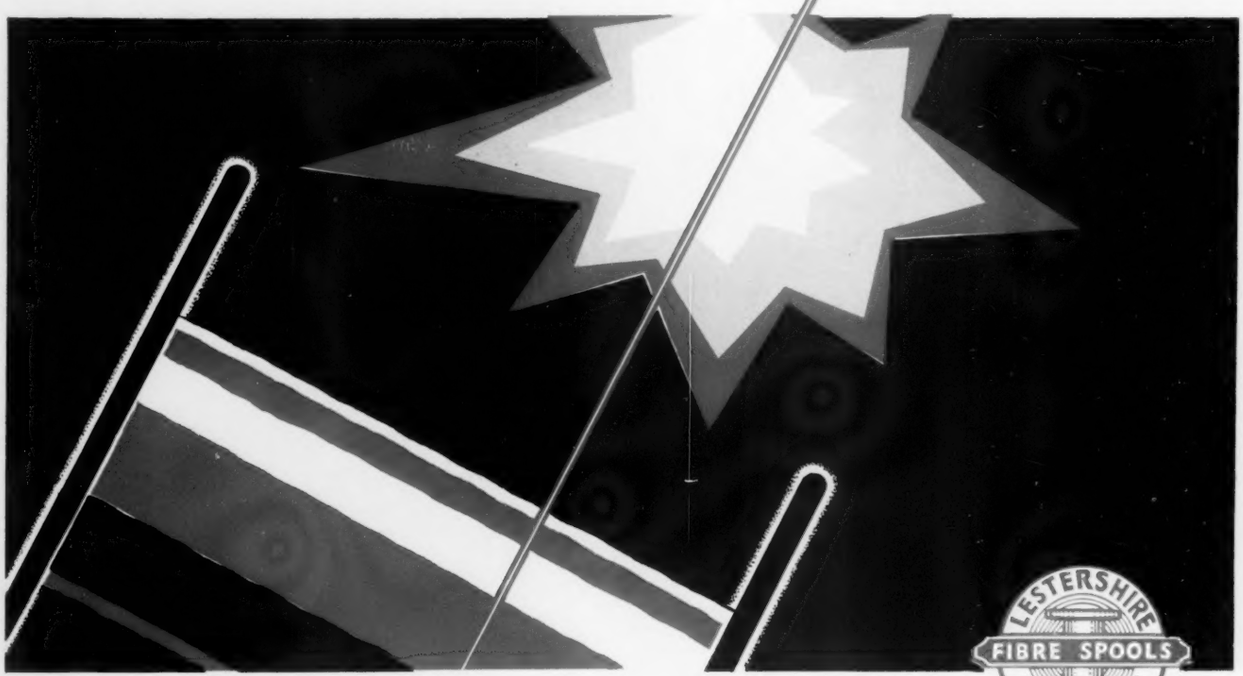

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Pictorial History of Textile Machinery

By Prof. Chas. E. Mullin, D.Sc.
Clemson College Textile School,
Clemson College, S. C.

Part V

(Editor's Note: This is the fifth of a series of features in which illustrations of the earlier models of regular textile machinery, together with brief descriptions, will be presented. The photographs and information were secured by Dr. Mullin on a recent trip to Europe. It is felt that these interesting photographs of old machinery will be suitable for filing or framing by the reader.)

Hargreaves's Spinning Jenny.
(A replica of the original machine.)

THIS MACHINE, which marks one of the first steps in the development of cotton spinning machinery, was invented by James Hargreaves, a poor weaver of Blackburn, England, between the years 1750 and 1757, and was patented in 1770.

The principal merit of the invention lay in the fact that one spinner could spin 120 different threads at a time, whereas previously, on a spinning wheel, he could only spin one thread at a time. Other new features of great importance were: the traveling carriage which drew out from the bobbins of roving definite lengths, stretched them, and, by the rotation of the spindles, twisted them; and a wire guide which, pressing on the twisted yarn, formed it into cops on the spindles as the carriage returned. The method of drawing out a roving finer by passing it between pairs of rollers revolving at different speeds had been invented by Lewis Paul in 1738, but Hargreaves may not have heard of it, for, although the patent had expired in 1752, he did not use it in his jenny. However, Arkwright incorporated the arrangement in his waterframe of 1769.

Hargreaves was the victim of the popular resentment against labor saving inventions and of the mistaken opinion, prevalent at that time, that such machines would throw large numbers of people out of work. His machines were broken up and he fled for his life to Nottingham.

The method of spinning cotton yarn on this machine was as follows: Rovings, with a very slight amount of twist, wound on bobbins, were carried in a fixed creel beneath the carriage. They passed from the bobbins to the spindles between two wooden rails on the carriage, which could grip the rovings between them and release them when the carriage was moved out by the spinner. When sufficient length of roving had been unwound from the bobbins the wooden rails were closed up. The carriage, which had a traverse of about six feet, was then moved further out, giving a stretch to the roving.

When the stretch had become as great as the roving would bear, the wheel was turned by the spinner by hand and the spindles thus driven by means of a rope band. This gave a twist to the threads and they were then strong enough to bear a further stretch, which was given to them by moving the carriage a little further out. When the stretch was sufficient the carriage was stopped and the wheel continued to turn until enough twist had been given to the threads. The carriage was then pulled in and the wire guided the yarn on to the spindles, which continued to turn and so to wind on the yarn, forming cops.

The spinning jenny led directly to Crompton's mule, but lacked most of the motions which enabled the latter machine to spin the finest counts and, when made automatic by Roberts, to survive without essential alteration until the present day. The original is in a British museum.

up with lint or trash of any kind, oiling the slubber steps every three weeks. The carriages should be brushed out at every doff, with a good clean yarn mop, keeping the weights on the top rolls weighted properly. The frames should not be run too full before they knock off. It will cause stretched roving and uneven roving. Keep all rack gears and lifting shaft and gears on carriage working freely. Give the back of the slubber a good oiling every Monday, that is, all the lifting shafts, etc.

The slubber should be torn down at least three times a year, giving it a good overhauling.

We will deal with intermediate roving frames and jacks as one, and what is said about one will apply to the other also. As on the slubber, keep well cleaned and oiled; pick flyers on each doff; oil the spindles on Mondays and Thursdays and clean the top rolls on doff. The frames should never be fanned off. Keep the roving skewers turning freely. Keep the clearers and front steel rolls picked clean. See that the carriage is working freely. Keep the right tension builder and lay gears on, so as to make a nice, firm, smooth bobbin. See that the roving guides are working and that the roving trumpets are not full of lint or trash. Keep the bobbin gears set so that they will not be seen jumping every now and then. When creeling, piece up the end, say half an inch from where it was broken off the other end. Do not allow a long piecing, as it causes doublings. See that all doublings and singlings are pulled off the oil steps at least every four weeks. Keep the creels brushed out with a hair brush, but do this on the doff, so as to keep the lint from flying into the work. Tear down the frames twice a year; clean the steel rolls and bobbins and spindle gears. Give them a general overhauling. See that all gears are properly set so as to cause no back lash when starting up a frame. Never allow any part of the frames to be fanned off, but use a hair brush and a good waste mop and see that the frames are kept clean.

And, Finally, the Spinning.

Now, as to the spinning. Keep the right number of traveler on the frames so as not to cause too much pull, and at the same time, it should not be so light that it will cause ballooning. Keep the clearers clean. Keep the frames clean and well oiled. In general, see that the roving guides are working and the trumpets clean. Keep the ring rails clean. Keep the under guide boards wiped. Keep both back and front guides clean at all times. Keep the tops of the creels wiped off. Keep the right number of picks in the builder motion, so as to build a nice, firm bobbin. Have the roving skewer turning freely, and all the under parts All heads and rockers must be kept clean at all times. Oil the spindles every two weeks and have the rings and spindle set plumb when wiping the roving, as it is called. Do this every day, and lift up the skewers and wipe the bottom of them off. Take down the frames and clean the steel rolls once a year. Keep the saddle and lever stirrups set so that the proper amount of weight will be on the top rolls. Have the rolls on both speeders and spinning set to suit the length of the staple being used.

We could go on and on with this article, but space will not permit. We have tried to give an idea of some of the things that cause uneven yarn and tell how to remedy them, and trust that what has been said will be of some help to someone.

REX (N. C.)

What Causes Hard Ends on Intermediates?

Here's a chance for you carders to give your views on this problem and on the subject in general. Let us hear from you.

EDITOR COTTON:

I am having trouble with hard ends on my intermediates. I am running 15/16-inch cotton and have my steel rollers set 1 1/16-inch. This is on a 10 x 5 frame with ball bearing front roller and solid middle and back.

I am making a 1.16-hank roving on these machines, out of .50-hank slubber roving. The slubber roving looks good and we do not have hard ends when putting ends up on slubbers. The weight on the front shell roller is 16 pounds, and 18 pounds on the back and middle rollers. The break draft between the back and middle rolls is 1.067. The amount of twist in the slubber roving is .847. We oil the rollers on Monday, Wednesday and Friday.

The trouble seems to be worse during rainy and damp weather, although we get some of it all of the time.

I should appreciate discussion of this subject by COTTON'S readers, giving any general or specific information with reference to hard ends on intermediates, which might be of help in connection with this problem.

CONTRIBUTOR No. 4726.

Causes of Bow in Wide Sheeting.

Further opinions and suggestions on this problem, which was discussed in several previous issues.

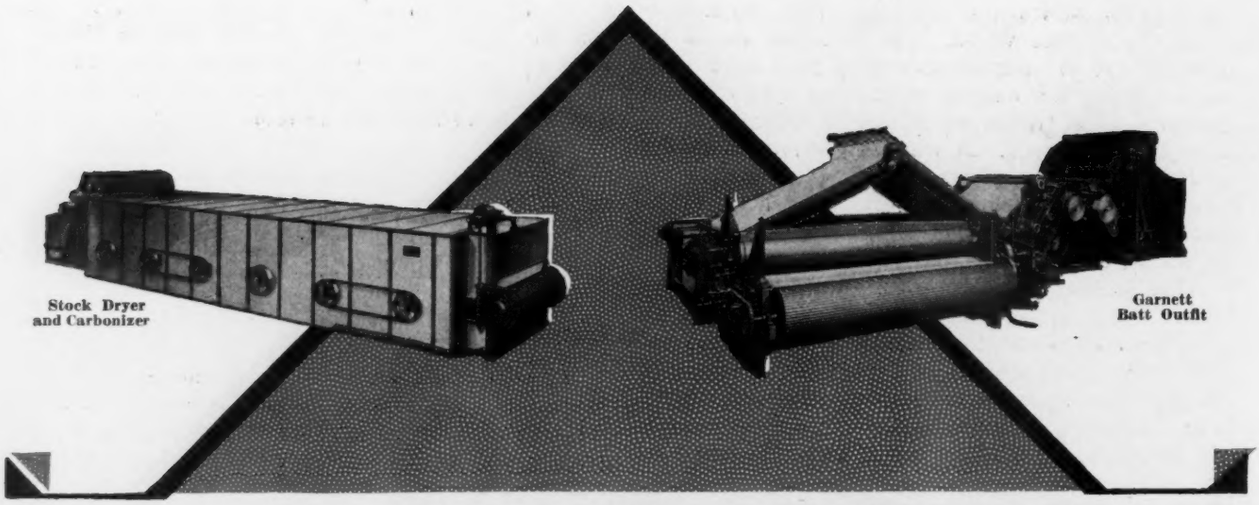
EDITOR COTTON:

Within recent months you have been publishing some questions with reference to the causes of bow in sheeting and other cloth. The first one was from "PINE TREE STATE (MAINE)" and appeared in the August issue, and I notice that in the November issue you published another inquiry, with specific relation to wide sheeting, from "CONTRIBUTOR No. 4636."

It seems that both of these men are having difficulty with the bow being in the center of the cloth, that is, the selvage side being longer than the center of the cloth.

I have experienced the difficulty of bowed cloth, but my trouble is just the opposite—that is, the bow develops so that the sides of the cloth are shorter than the center.

It was on an 80-inch goods, with a Jacquard weave through the center, and a plain two-harness weave in the selvage, which was 1½-inch wide. This two-harness weave in the selvage took more contraction for the weave than was the case in the body of the goods; in the body there was a Jacquard pattern. I found that



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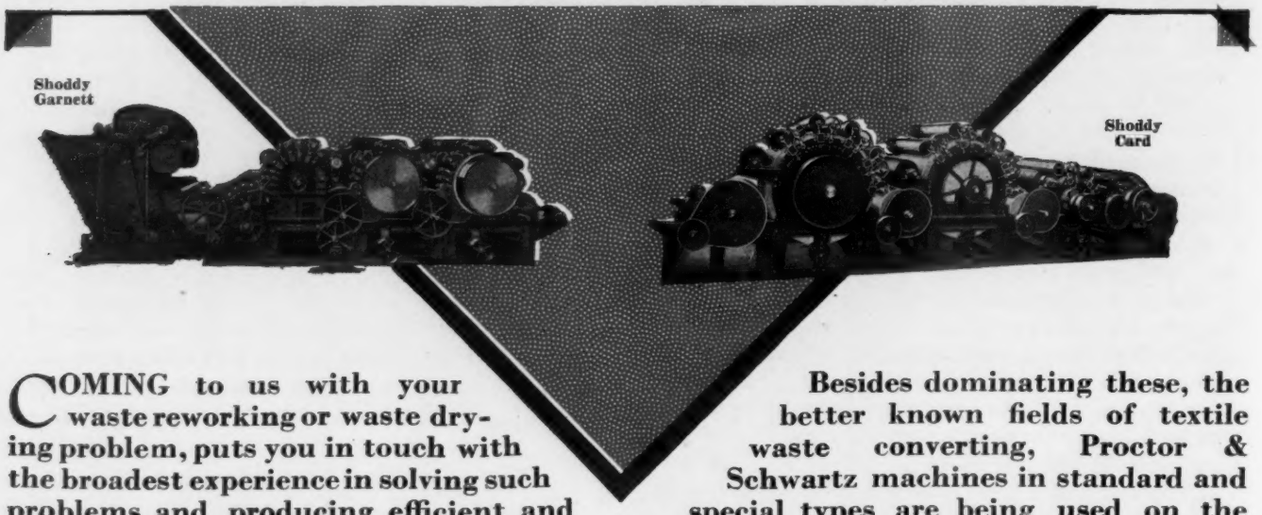

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the salvage ends were doing practically all of the pulling on the warp, and in this case we applied a twill weave in the selvage and this stopped our trouble. In the case of "PINE TREE STATE," however, I am presuming that he has a plain weave in the center or body of his goods and probably a tape selvage, and that his selvage does not require the same contraction as his goods in the body of the cloth. If this is the case, I would suggest that he put on a selvage motion with the same weave as is in the body of the goods, and if this is not practical, then I would try heavying up on the selvage by putting in more ends to the heddle eye and reed; or better still, put on a selvage on the warp of coarser count—just for the selvage. Then the selvage thread, being a little larger in diameter, will take just a little more bending in the interlacing around the filling in the weaving process, and therefore should take up just a little more contraction in weaving. I think "PINE TREE STATE'S" difficulty is the difference in the contraction between the selvage and the body of the goods. If this helps anyone I should appreciate hearing of it.

O. C. (N. C.)

Answers to Questions on Cloth Room.

EDITOR COTTON:

Please allow me space in some future issue to express my opinion as to the questions asked by "A. E. (S. C.)" in the January, 1930 issue concerning the best speed to run a folder and the average variation in measuring cloth on a folder.

I have had a rather varied experience with both sheetings and napped goods, but in this article I will confine my discussion mainly to sheetings.

From years of practical experience, I have found that the best speed to run a folder on sheeting, at the same time inspecting it, is 110 yards per minute. Of course if the cloth in question is to be inspected by hand over tables, I would suggest a speed of 130 yards per minute. However, I think that the large majority of us realize that there is nothing to be gained by high speed when the time lost due to break downs and the repair costs are taken into consideration.

Now, in regard to the variation of measuring cloth on a folder, my experience on sheetings or starched goods has been that by having the folder so adjusted that my first few laps would be 1/8-inch under 36 inches that by the time a single or double cut had been run it would be 1/8-inch over 36 inches. This, of course, will give very close to 36 inches around the middle of the double cut.

On the other hand, with napped goods I would adjust my folder so that the first few laps would be ¼-inch under 36 inches. Then by the time I had folded a double cut the folds would creep out to 36½ inches. But in measuring this same piece over a winder I found only a few inches difference in folder yardage and winder yardage.

A piece of cloth folded in the South on one make of machine and then re-folded on some other machine in some other part of the country may show a different yardage. The question is, which one is correct?

I would certainly like to see some more discussion

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along this line, for I think the question is worth debating on from the standpoint of the mill man, as well as that of the jobber or cutter.

CONTRIBUTOR NO. 4702.

How Is a Leathery Feel Secured?

Readers who have made this kind of goods are urged to tell of their methods of securing this kind of feel.

EDITOR COTTON:

I would like to see some discussion in the "HOW OTHER MEN MANAGE" department as to means of securing a hard leathery feel on our 76x48, three harness goods, 13s warp and 17s filling.

I presume this will require a special size mixture, and if so, I should be glad to have your readers advise as to the proportions of starch and compound, other ingredients, methods of cooking, time element, etc., in order to produce a hard leathery feel on the goods.

If there are any other points to be watched in connection with securing this result I should be pleased to know of them also.

CONTRIBUTOR NO. 4733.

Causes of "Fuzz" on Sheeting.

An interesting answer to a problem which appeared in the discussion department of the April issue.

EDITOR COTTON:

You recently published an inquiry from "CONTRIBUTOR NO. 4705" who stated that he was having trouble with "fuzz" on the face of sheetings, 68x76, 21s warp and 25s filling. He said, "We can wet our hands and rub the cloth, and it will roll up in little balls." This man gave the following sizing formula: 52 gallons of water, 135 pounds of starch, 5 pounds of tallow, 10 pounds of gum. He stated that he cooked for one hour and thirty minutes, and adds 57 gallons of water and boils 20 minutes. His size is cooked in the basement and is pumped to the top floor to the slashers. The staple of his cotton is about 1 to 1⅛-inch, with a lot of fly.

This sounds to me somewhat like soft yarn, which may be caused by numerous things.

Furthermore, the starch may not have the binding qualities to stay on, but if it hasn't, then the warp should mat up some in the drop wires. I would suggest that he try adding more gum, say 10 pounds more, and, if the yarn hasn't more than standard twist, add about two turns to the warp and one or two to the filling, or as much as it will stand without giving trouble with kinky filling.

I would suggest that he set the loom with the harness level, and the reed as close to the fell of the cloth as it can be run and make good cloth—say, not over one inch from the fell, anyway. With the crank at back center, the shade should be just open enough to miss the shuttle. If the shade is too wide, reduce by moving back on treadles, making sure that the harness runs straight up and down, not slanting in at the bottom or top. He should also be sure that the drop wire box plate is set so that no extra strain is on the yarn. If the yarn shows fuzzy behind the harness, he might try a flat lease rod between the drop wires and harness.

I would set the feed plate on the cards to not less than 12/1000; and he might try a few cards set at 14/1000 and note the results.

He should be sure that the metallic drawing rolls are not cutting the fiber, and also that the blade beaters on the pickers are reasonably sharp and not set too close.

There is not much doubt but that the trouble lies in the cotton, but several things, some of which are mentioned herein, can be done which will help the situation.

My guess is that he is using Western cotton, and it has a large percentage of immature fibers which have practically no strength, also the percentage of short fibers is large, caused by cotton being gathered before the bolls open or after the frost has hit the bolls.

As a final suggestion, he might try a few kettles of size by cooking only 45 minutes. If this improves the warp any, it would probably indicate that the starch is weak.

If he had stated the speed of his front roll on spinning, and how many sides per spinner, or had just indicated whether or not the spinning was running well, that would have been information in trying to answer the question.

CONTRIBUTOR NO. 4714.

Surfacing for Take-Up Rolls.

Means of preventing cut places or "star marks" on goods using a 300-denier rayon filling. Have you any further suggestions?

EDITOR COTTON:

In the February issue, "M. T. (N. C.)" suggested some discussion as to the proper surfacing for the take-up rolls on a 12x4 loom, making wide rayon goods.

He said that he makes a 60x50 piece of goods, using 300-denier rayon filling. He listed two troubles. The first was the cutting of the fabric by the surfacing on the take-up roll. This is really a very minor trouble. Until recently, the majority of mills on rayon and silk used either No. 1 or No. ½ sandpaper on the take-up roll. Until this is worn to some extent, this sandpaper makes what are known as "star marks" on both silk and rayon fabric; and these star marks are in reality what your correspondent refers to as cuts. If the finer class of sandpaper is used, there is a possibility that the paper will not have sufficient frictional qualities to keep the cloth from slipping. After considerable thought and by actual tests, a crepe rubber has been developed which does not have the drawbacks of the sandpaper or of the corrugated rubber, and I believe "M. T." would be interested in trying this out.

The other trouble he mentioned in connection with these goods is that of the slippage occurring on the take-up roll. If we have properly interpreted his inquiry, his big trouble is in the diameter of the take-up roll, together with the take-up gears. He did not indicate whether he is using a cotton loom or a silk loom. I have noted a great many cases where mills have applied the weaving of rayon onto a cotton loom,

without in any way bringing the loom up to the refinement of a silk loom. The ideal take-up for handling rayon is identical—or as nearly identical as possible—to a silk take-up.

On a silk loom, as you perhaps know, the circumference of the take-up roll or drum over the covering is approximately 31½ inches in circumference. We have not found it practicable to increase the diameter of the take-up roll on cotton looms at this point, due to the construction of the loom, but have on a great many looms increased it to 20-inch circumference. The circumference of the take-up roll on the average cotton loom is around 14 inches, and is not enough circumference to allow the cloth to grip firmly and not slip.

In addition to this, it is very important that pressure rolls which are covered with felt be added to the take-up, and that the gearing on the take-up be cut gears instead of cast gears.

CONTRIBUTOR NO. 4693.

EDITOR COTTON:

The question of "M. T. (N. C.)" with reference to cutting and slipping on the take-up roll on a wide loom in making a 60x50 fabric with 300-denier rayon filling is interesting. He pointed out that he had endeavored to remedy the slipping, etc., by using a fine medium steel surfacing, and I believe this is about the best solution. If the loom were so arranged that the parties could put in a large take-up roll, the same as is used on silk, very fine sandpaper would be the best thing to use, but I judge from his letter that his take-up roll is small in diameter, and as indicated, in such a case in my opinion fine perforated steel is the best thing to use.

Also, in some cases, it is advisable where possible to put in a drag roll behind the tin roll so that the cloth gets as much contact with the tin roll as possible.

A. S. (N. C.)

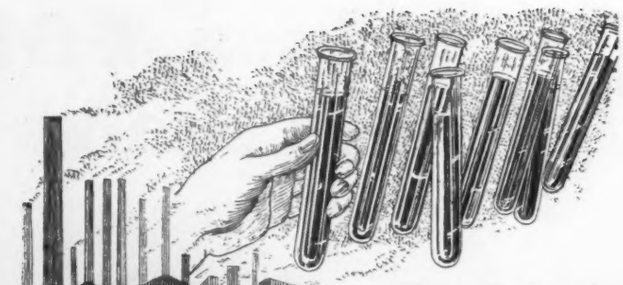
The Need for Accurate Testing.

(*Continued from page* 752.)

one damper-setting simply keeping the air in motion.

This method of conditioning laboratories has been very carefully tested out over a considerable period of time by some tire cord manufacturers who have found it accurate, simple and inexpensive. It is not necessary, of course, in equipping a small laboratory to buy all commercial equipment. A pan of water over an electric stove offers the cheapest means of humidification, and some biscuit pans bought from the ten cent store, together with an electric fan makes a de-hydrating equipment. This cabinet, however, is illustrated here as showing a convenient and economical means of having a complete laboratory control in small compass.

There will be very few mills that have not some spare floor space about the plant where they can partition off a small room as a laboratory. This laboratory should be practically air-tight, and should have double walls. It should be lined inside with Sheetrock or some similar gypsum wall board. The use of this material is highly desirable on account



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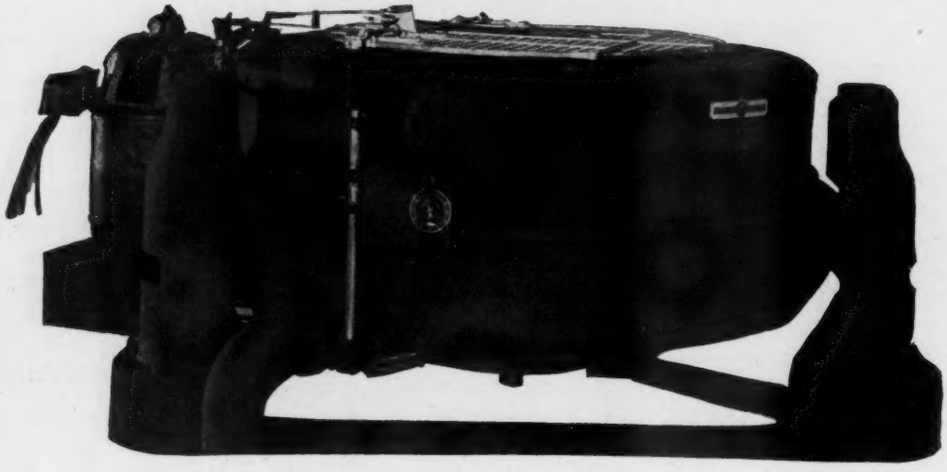

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of its great porosity, which causes it to act as a stabilizing agent in holding the regain constant. A sufficient quantity of Sheetrock to line the walls and ceiling of a 700 cubic foot laboratory would probably hold two or three gallons of water, and after the laboratory has been brought to the proper condition, the moisture stored up in the gypsum wall board acts as an agent to maintain uniformity. Such air as leaks into the laboratory, or enters when the door is opened, immediately absorbs from, or yields to the wall board sufficient moisture to condition this air, and it is quite astonishing how long a laboratory lined with this material will maintain a constant, unvarying regain.

This laboratory, in addition to the moistening and drying equipment, should contain a yarn reel, roving reel, grain scale, tensile strength tester, and a regain indicator to show when the proper regain is being maintained. In the illustration in Figure 2, it will be noted that the regain indicator sits on top of the regain controlling cabinet, with the actuating element on the side opposite the mouth of the cabinet, so that excessively moist or excessively dry air cannot be blown against it.

This element is made out of the material being tested at the time. If roving or sliver is being weighed, an element of roving or sliver would be placed on the regain indicator. If yarn, either single or plied is being tested, the element should be made out of this same material, and similarly on cloth tests, a cloth element should be used. The reason for this lies in the fact that different materials will have different regains in the same laboratory. Of course, in the case of roving or sliver, it is not necessary in the ordinary mill laboratory to use separate elements, as the difference in regain between roving and sliver is infinitesimal.

There is, however, a very appreciable difference between the regain in raw cotton, roving or sliver and heavy plied yarns and woven goods made from such yarn, and this is the reason why it is so much better to make all tensile strength tests on a regain basis rather than on that of fixed temperature and relative humidity. Since the breaking strength is affected by the regain, and the regain will vary in different constructions in the same laboratory, it can be seen that testing on the basis of regain is the only really accurate method, and using an element of the particular construction to be tested will give the actual regain in that construction.

Figure 3 shows a tensile strength machine which may be used for breaking either yarn or cloth.

Sometimes in equipping a laboratory, it will be found that all of this material is on the premises, and simply needs to be moved into the laboratory. In other cases. it may be necessary to buy some of it. Of course, if the majority of the equipment is already on hand, the cost is negligible.

Every mill needs such a laboratory equipment, and the cost is trivial as compared with the benefits derived. Every mill man can recall numerous cases of disputes with customers over the size of the yarn, the weight of the cloth, or the breaking strength.

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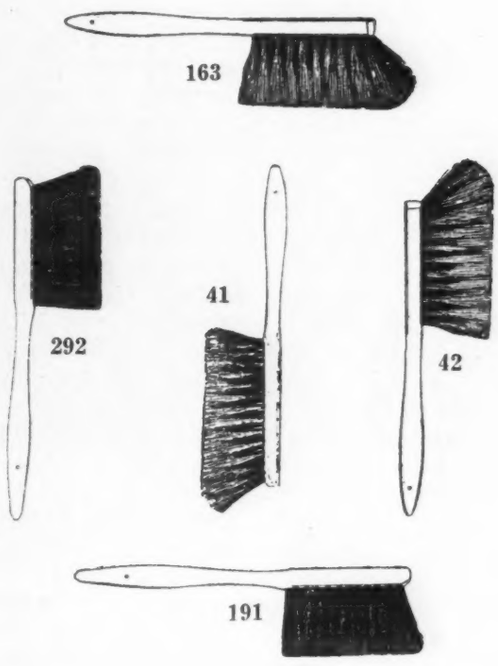

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There have certainly been cases where buyers have taken undue advantage of a firm they knew to be improperly equipped with testing equipment, and a few adjustments will soon amount to a great deal more than the cost of equipping a small laboratory. A great many mill men have been accustomed to thinking of a laboratory as a very complicated and costly affair, requiring a trained technical man as its attendant, but as outlined here, it is easy to see that a laboratory is a comparatively simple, inexpensive matter that anybody can run. The method of operating a laboratory equipment such as I have described, requires no special training, and very little attention. Taking a look at the regain indicator two or three times a day when no one is in the laboratory is all that is needed. If the indicator shows the regain too low, turn on the humidifier until the indicator shows the proper regain. If the indicator reads too high, turn on the de-hydrator until it goes down. Any person having to deal with such a laboratory for a few days will soon learn from experience just how long it takes to bring the regain up 1 per cent or down 1 per cent. It also takes very little time to find out just how long each material needs to be conditioned to bring it to the proper regain. Roving or sliver will reach the desired regain in a few minutes unless very dry or very damp. However, it is seldom necessary to expose roving or sliver more than thirty to forty minutes to bring it within a very small fraction of 1 per cent of the correct regain, so that even a quick test will give reasonably accurate results.

The ideal method of testing is to place all material to be tested in the laboratory in the afternoon, and leave it there all night. Then you may be quite sure that it has reached the exact regain shown by the indicator, and if the porous wall board lines the laboratory, it will hold the indicator at a constant point with very little fluctuation.

Of course, in recommending the use of a porous wall board lining, it must be understood that the laboratory is located in a dry spot. A laboratory located in a dark, damp building, where the natural regain is always excessively high, should not be lined with this material, but a laboratory should never be located in such a place unless it is impossible to find space anywhere else. Since the principal purpose of a laboratory is to permit maintenance of uniform regain, it should always be located in a dry place, free from drafts, where artificial humidity conditions can be most easily maintained.

If it is desired to obtain the moisture content in baled cotton as delivered to the mill, it will be necessary to add a drying oven to this equipment, but for all testing purposes the equipment just described is adequate.

A mill with a properly conditioned laboratory has comparatively few complaints from customers as to weights and breaking strength, for if proper use is made of the laboratory, weights and break can be held to the desired standard, and customers who know that a mill has good laboratory equipment, and can make accurate tests, are very unlikely to make complaints without having the material checked by an authorized laboratory, in which case the complaint falls flat before it is made.

A great many plants that have excellent laboratory equipment in other respects lack any means of removing moisture from the air, and such concerns will find that a few trays of calcium chloride and a fan will solve the problem of taking care of too much moisture. The cabinet shown in Figure 2 is a neat and convenient manner of housing the trays for the calcium chloride.

I do not believe that any mill, regardless of how small it may be, or how coarse its product, can really afford to be without laboratory equipment, when it can be installed as simply and cheaply as here outlined, and even where no question of breaking strength is involved, the value of a laboratory for checking sizings will repay its cost many times over.

Thirty Years of Textile History.

(*Continued from page* 758.)

succeed Mr. Williams.

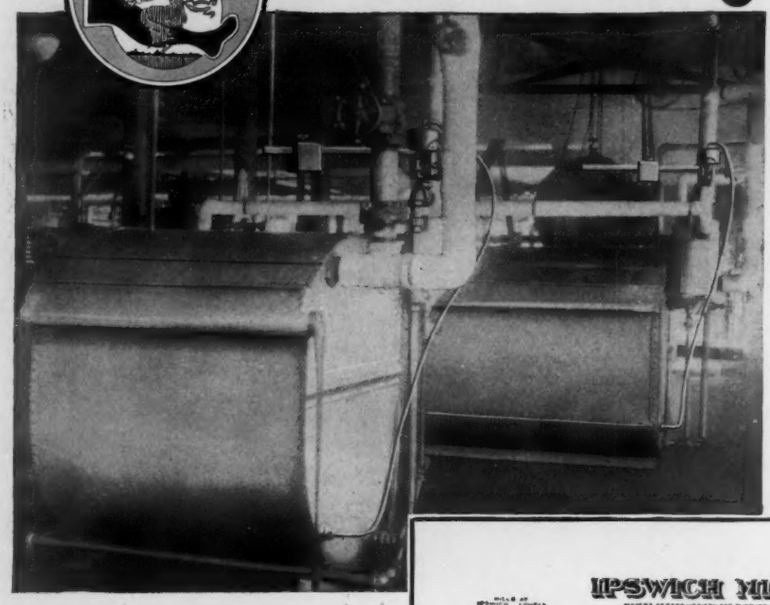
Again, in 1916, the sixteenth annual meeting was held in Atlanta, on May 30th, under the direction of President Allen F. Johnson, and was held at the Ansley Hotel. The principal features of this convention were an address on industrial relations by Hal M. Stanley, followed by a general discussion of the importance of such work in textile mill communities.

With W. J. Vereen as president, the seventeenth annual convention met at Brunswick, Georgia, at the old Oglethorpe Hotel. Once more we find the members deeply concerned over the questions of National Child Labor Legislation, industrial relations work, and group insurance for mill employees.

For the first time the Association held a convention out of the state, when the eighteenth annual meeting was held in joint session with the Cotton Manufacturers' Association of Alabama, at the Grunewald Hotel, in New Orleans, on June 13, 14 and 15th, 1918. R. C. Freeman, of West Point, Georgia, was president of the Georgia Association at this meeting. Much of the program was devoted to the problems brought on by the World War in which the United States was then engaged. They discussed not only their own industrial problems, but several speakers urged the members to co-operate with the Government in its effort to raise funds for carrying on the war. At this meeting the first industrial relations committee was authorized, and the resolution creating this committee provided that it would be a permanent part of the Association's work.

The nineteenth annual meeting was also held outside of the state during Mr. R. C. Freeman's second year as president, the convention being held at the Marlborough Blenhiem Hotel, in Atlantic City, N. J., in June, 1919. Faced with many serious problems of wages, labor and production following the World War, the members devoted most of the meeting to discussions of these questions in addition to addres-

After testing 4 well-known regulators . . . Ipswich Mills standardized on POWERS



At left, some of the Powers No. 11 Regulators controlling temperature of dye liquor in Smith Drum Dye Machines at Ipswich Mills.

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Yours very truly,

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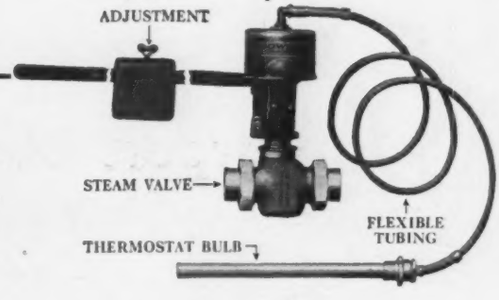

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es on liability insurance, vocational education, child labor legislation, etc.

And then in 1920, came the memorable trip to Canada, where the twentieth anniversary of the Association was celebrated in Quebec, with D. A. Jewell, Sr., as president. I shall not try to tell you much about that wonderful trip and the splendid program of entertainment, for Mr. Jewell, and others who took the trip are here, and they can tell you a great deal more about that glorious excursion into a land flowing with other things besides milk and honey in the year 1 A. P. (After Prohibition). The business program was very interesting and resolutions were adopted urging a compulsory school attendance law, revisions in the child labor law, and closer co-operation with the Georgia Tech textile school. During this meeting, Mr. Glenn offered his resignation as secretary and treasurer of the Association, but the Executive Committee, to whom the matter was referred, prevailed upon him to serve longer.

Following the precedent that had been established during the three previous years, President J. A. Mandeville again took the convention out of the State to hold its twenty-first annual meeting in Philadelphia, in connection with the silver anniversary of the American Cotton Manufacturers' Association. This, too, was a delightful meeting and enjoyed by all who were fortunate enough to be present.

In 1922 the twenty-second annual convention was held at the East Lake Country Club in Atlanta, with Cason J. Callaway, as president. It was a pleasure to read about this particular meeting, because of the prosperous conditions of the industry at that time. While cotton was selling at better than 20 cents per pound, production was being increased rapidly and operating schedules were being extended wherever possible. In the face of this prosperity, though, the president urged the members to adopt a uniform 55-hour per week schedule, both to prevent overproduction, and for the benefit of the operatives. A very strong sentiment was expressed against the employment of any child under 14 years of age in a manufacturing plant. Back in those days they were worried over the tax situation, and Robert C. Alston, of Atlanta, made a very interesting address on "Tax Laws—Present and Proposed." Dr. Soule, of the State College of Agriculture, spoke on the need of improving the grade and staple of Georgia cotton to meet the spinning requirements of Georgia mills.

East Lake Country Club in Atlanta, was again the scene of our convention, in 1923, for the twenty-third annual meeting with the late Lee Jordan, as president, was held there. It was at this meeting that the Association began to function with regular offices and a full time Secretary. Mr. Glenn had found it necessary to resign as secretary and treasurer of the Association. Officers were selected in the new Atlanta Commercial Exchange Building, and W. M. McLaurine, was elected as full time secretary of the Association.

At this meeting the adoption of a 55-hour per week schedule was again urged and it was recommended that the age of children employed in manufacturing plants be not under 14.

The members must have enjoyed the meetings at the East Lake Country Club, in Atlanta, for the twenty-fourth annual convention was also held there with P. E. Glenn as president. The addresses and discussions were principally about compensation insurance, child labor legislation, education, publicity, etc. Resolutions were presented in regard to the Federal income tax, and Muscle Shoals power development, the Carolina mill rules, and the New Orleans Cotton Exchange.

The convention of 1925 celebrated the twenty-fifth anniversary of the Association, and was held at the Atlanta Biltmore Hotel, with George Harris as president. Mr. Harris was re-elected for the second year, and the twenty-sixth annual meeting was held at the Druid Hills Club in Atlanta. In the meantime, the Georgia Child Labor Law had at last been passed, and there was considerable discussion of the operation of that act.

With Mr. Harris as president for the third year, the twenty-seventh annual meeting was held at the Atlanta Biltmore Hotel, and much of the program centered around the A. French Textile School. In the meantime, the Association had lost its secretary, Mr. W. M. McLaurine, who had accepted a similar position with the American Cotton Manufacturers' Association. He was succeeded by T. M. Forbes, our present secretary. During 1926, and the early part of 1927, the Cotton-Textile Institute had been organized largely through the efforts of several Georgia mill men, and it has since played a most important part in the life of the textile industry.

After having met in Atlanta for six straight years, W. H. Hightower, the president, decided to hold the twenty-eighth annual convention at the Forrest Hills Ricker Hotel, in Augusta, Georgia. A very constructive business program with most enjoyable entertainment features were provided for this meeting.

The twenty-ninth annual convention was held in 1929 on historic St. Simon's Island, at the Cloister Hotel, on Sea Island Beach, with J. J. Scott, as president. The memory of that pleasant and interesting meeting is still fresh in the minds of all of us. And that brings us up to our present convention, the thirtieth of the history of the Association.

I hope that I have not bored you all with this lengthy account of the history of the Association, for while I felt that you would be interested in hearing about the growth of this organization and about the leaders who have built the textile industry of this State, my main purpose in calling attention to these facts was to show you that all during these past thirty years of good times and bad, the mills have been confronted with many problems needing co-operation thereby making our Association necessary as a means of carrying on this co-operation and the upbuilding of the industry, together with the welfare of its employees, therefore, we should all continue to support our Association to the fullest extent for the good of the cotton mill industry of the State.

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I would just like to say a few words more and then I will not detain you longer. It is hardly necessary for me to describe conditions during the past year 1929, and as to the final outcome of 1930, it is not easy to forecast results, but we can make these results better if every mill will balance production with demand and ascertain their actual cost of manufacturing and get the habit of quoting prices that will show a profit. The Cotton-Textile Institute can offer you excellent assistance in cost accounting work and anyone that is not able to accurately determine their cost should avail themselves of this service offered by the Institute. We seem to be price-backward. Let's quote and hold for profitable prices and stop so much talking about prices that merely show cost. No mill executive should feel satisfied to go before his stockholders at the end of any year and say, "We have not had such a bad year, as we have not lost any money." I believe that the most of us are operating our plants efficiently, and if this be true, then the one trouble existing today lies with the selling agents, and their not being able to secure profitable prices, therefore, I think that we should all insist that our selling agents secure profitable prices that will enable us to pay good wages to our employees and a fair return to the stockholders on invested capital. If this is done, I can see no reason why we should not look to the future with pleasure and confidence.

Carding Discussion at Clemson College.

(*Continued from page* 766.)

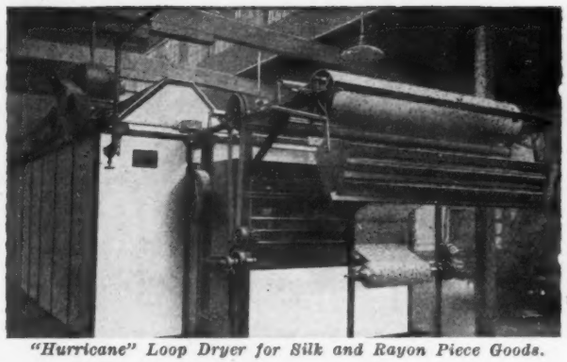
age of fibers of any given length. He pointed out that usually not more than 20 to 25 per cent of the fibers of cotton classed as 1-inch will be of that length; that 70 to 80 per cent will be of other lengths, and explained that his organization is endeavoring to find out the causes of this variation. He said that, "Some of our best plant varieties of cotton already show a much higher degree of staple than the miscellaneous lots of cotton that are drawn from gin run seed generally throughout the country."

Dr. Barre told of the work of Mrs. Wanda K. Farr, in making a detailed study of the growth of the cotton fiber, taking bolls from the time the cotton breaks through until the boll opens. He said that the fiber continues to elongate, for instance, after 30 to 32 days, but that after that the walls of the fiber thicken and the strength is obtained by the reeds laid down on the fiber hair. Dr. Barre urged more attention on the part of the mills to these important phases of cotton production.

Spraying Oil on Raw Cotton.

The chairman then began the practical discussion of the afternoon, taking up first the question of spraying oil on raw cotton, and asking Marshall Dilling, superintendent, A. M. Smyre Mfg. Co., Gastonia, to discuss this.

"I have been using oil off and on for about four years; we are on it right now," responded Mr. Dilling. "We use about .3 of one per cent, based upon the quantity of the cotton fed in. We find that our



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machines in the mill generally are kept much cleaner by the use of oil. It seems to have a tendency to settle the dust and fly, and that of course has a tendency to make an improved yarn in that there are fewer slugs in it. In making ply yarns, there is some increase in the breaking strength. We did not find this increase immediately on taking the yarn off of the twister, but after letting it stand for a while it did show an increased strength.

"We found fewer ends down on the spinning, and we think that part of that is attributable to the fewer slugs and gouts because the card room was cleaner. There was considerably less end breakage on the high speed spoolers. Of course, .3 of one per cent is not much of an increase, but we think that it stays in there, and that it is worth while to put that in if you can keep it there, because oil is cheaper than cotton. If it does stay there, then of course you get the benefit of it in selling the yarn."

The chairman pointed out that Mr. Dilling is on fine yarn, and asked for further discussion by the members, particularly inquiring for reports from any who had tried the oil and discarded the practice.

E. G. Waits, overseer of carding, Newberry Cotton Mills, Newberry, S. C., said, "we tried it but we did not find any advantage in using it. The spinning ran a great deal worse with about .4 per cent than without it." Mr. Waits said that this was on 9s to 28s, at a mill where he was previously located and that they had discontinued the practice after about four months' experience with it. Another man said that he had tried it for about three months on 30s and 40s and had discontinued the practice.

Robert K. Eaton, referring to Mr. Dilling's report, asked if the same relative humidity conditions were used, and Mr. Dilling replied in the affirmative. He said, "we had the Arkwrights make a couple of tests on the use of oil; one of them was made at my mill, under my supervision, and the other at Cooleemee under Carl Harris, and both of these tests showed an advantage in the use of oil."

J. C. Cudd, of the Wallace Mfg. Company, Jonesboro, S. C., inquired from those who had experience with the oil as to whether they had a crude or a modern method of applying the oil. Mr. Waits said that in their experience with it, the oil had been applied in the hopper.

"There has been a considerable improvement made in the method of applying the oil," said Mr. Dilling, "and also in the quality of the oil itself, which has made it more suitable. Some of the older systems I do not think were satisfactory, and when applied in the hopper it did not prove satisfactory, but now I apply the oil in the conveyor pipe before it goes to the vertical opener in one mill, and after it has been through the vertical opener in the other mill, and we find much better results with it than when we applied it in the hopper. It used to keep the hopper in a very deplorable condition. The oil would get onto the spiked apron, and it was hard to clean off, but now we have very little trouble."

Marion T. Grimes, superintendent, Chicopee Mfg. Corporation, Gainesville, Ga., asked Mr. Dilling whether he had any difficulty when applying the oil in the

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At the end of 5 or 6 weeks your record will show that the total amount of NON-FLUID OIL added to No. 2 is equal to about one filling—while No. 1 has needed complete replacement every week. In other words NON-FLUID OIL *has outlasted liquid oil 5 or 6 times.* A comparison of the cost will explain why most carders regularly use NON-FLUID OIL.

NON-FLUID OIL also keeps licker-in bearings cool—won't squeeze out of heavy cylinder bearings—and stays *off* card clothing.

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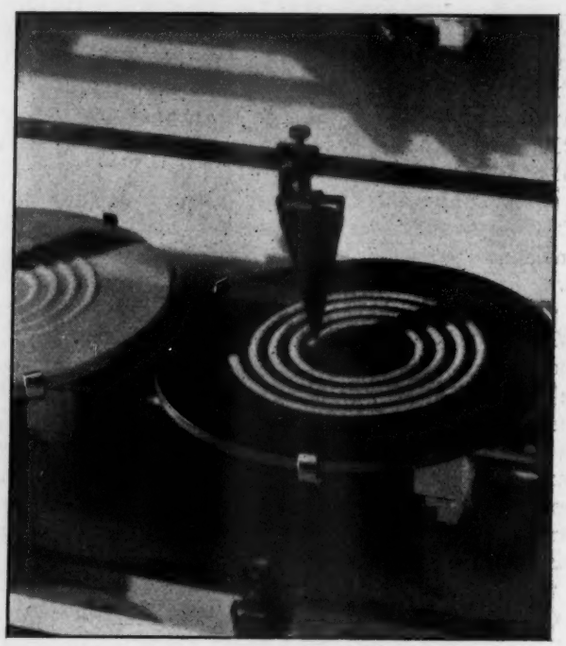

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You get these cuts in cost from Du-Lite because it spreads more easily and more rapidly.

In your plant there are just so many thousand square feet of surface to cover. And when Du-Lite completes your job even a day or two sooner, or gives you the job in the same time with fewer men—the saving on the maintenance cost sheet figures up worth while.

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This speed and ease of spreading was built into Du-Lite through a process of pre-testing, which also took into consideration all the other requirements you look for in a good finish for your plant.

The perfect finish requires, in addition to this *ease of spreading*, a high *resistance to dirt adhesion* to keep your walls cleaner by offering a hard smooth surface, *resistance to yellowing* for lighting economy and better appearance, and *ability to spread farther* which cuts your charge for the paint itself by making it cover more square feet per gallon.

In formulating this special finish du Pont chemists did not follow an old recipe—they had to know accurately what proportions of certain pigments and oils would give them a paint to meet this high standard. They pre-tested many different formulas—taking months of time — spending thousands of dollars —and evolved the efficient Du-Lite formula.

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Every element of chance is further eliminated by precise control that follows every batch of Du-Lite through the plant — from the raw material to the cans. At every step each mixture is checked against the standard pre-tested formula, to insure to you that each gallon is dependable and like the rest.

You can buy Du-Lite in Flat, Eggshell or Gloss finish, as well as in a specially prepared flat-drying undercoater. Du-Lite is equally economical on wood, brick, plaster, concrete and metal surfaces. You can wash it easily as tile. If desired, Du-Lite can be tinted to any shade.

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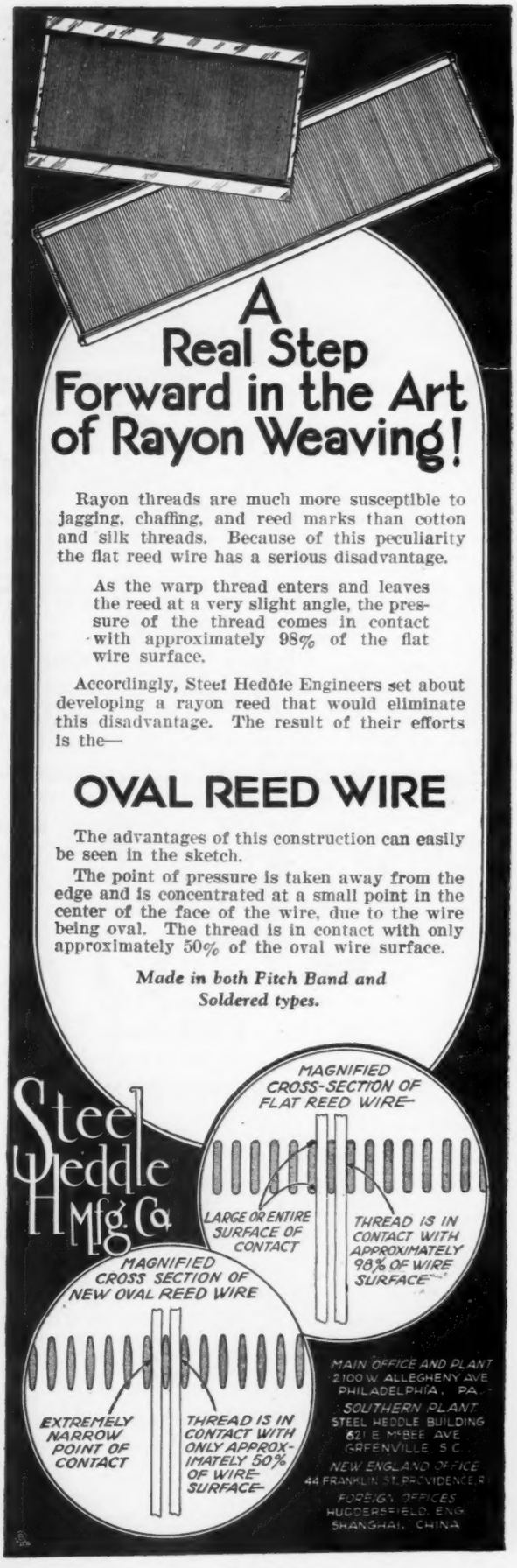
conveyor pipe. Mr. Dilling said that he had had some trouble about two years ago, but that in recent months it had stopped. Mr. Grimes asked the reason why this had been eliminated, and Mr. Dilling said that he thought it was due largely to the improvement that had been made in the oil itself. Responding to further inquiries, he said that in one mill, the pipe is about 60 or 75 feet long before it goes into the vertical opener, and in the other about 100 feet. Mr. Grimes asked whether any trouble might be experienced if the conveyor pipe were 1,000 feet long, but Mr. Dilling could not answer this; Mr. Grimes also asked as to the size of fan used, pointing out that the amount of draft in the pipe might have an effect, but Mr. Dilling did not recall the size of the fan he uses. He said, "I might say if you will apply it before it runs through the vertical opener that it will help to overcome the conveyor pipe trouble."

There was some discussion here as to the character of the oil being used at present, and Mr. Dilling stated that it is somewhat lighter in color than formerly.

Robert Huskey, overseer of carding, Whitney Manufacturing Company, Whitney, S. C., was the next man to discuss the use of oil. "Several years ago we tried oil and sprayed it into the hopper, with a very crude method of applying it, and we found that the cotton would lodge in the rack in the hopper and get oily, and then it would gum up the cards, so we went off of it. But about a year ago we went back on the oil and put it into the conveyor pipe, and had some trouble at first with the conveyor pipe, but we have a drop just before we put the oil in, and had an extension to that, which we clean out every day, and then have about 20 feet of pipe, which we clean out about every six months, and we do not think we will have any more trouble with it." Mr. Huskey continued by saying that the use of the oil now gives him a considerably cleaner card room, declaring that he puts on about .18 per cent. He said he started off with some low grade cotton a few weeks previously and had gradually increased the amount of oil and that this had eliminated the dust and makes the conditions in the card room much more pleasant. "We see no evil effects on the spinning."

G. D. Frye, of the Florence Mills at Forest City, said that, "I have been using oil for about four or four and a half years, and have had practically no trouble except when something was out of fix. If I were selling oil, knowing the card room as I do, I would go around and sell it as a dust-down. It has other advantages, but it is a wonderful dust-down. Around stores and other places, when they are cleaning up you will see a man put down something which is swept up in cleaning, and this must be some advantage because it costs money. This oil does not cost a lot of money; and I do not see how the weight of the oil gets out of the cotton. I believe that for the benefit it is to the people who work in the mills, it is worth all it costs, and all the trouble it takes, and I feel I would be doing a lot of good if I could sell it to every man today." Mr. Frye indicated that he uses around .3 per cent.

Later in the meeting, Mr. Dilling read from the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latest Book of Proceedings of the Southern Textile Association as to the test conducted on oil spraying by A. R. Marley at the Erwin Cotton Mills at Cooleemee. He gave first the result of the test on white cotton, as to ends down per hundred spindles per hour. On the oiled white work, he said that on the intermediates there was a decrease of 16.56 per cent; on the spinning, a decrease of 24.70 per cent, and on spooling a decrease of 25.81 per cent.

On the colored work, the decrease in ends down per 100 spindles per hour, in favor of the oiled stock was 70 per cent on the intermediates, 15.86 per cent on the spinning and 5.84 per cent on the spooling. As to breaking strength, on the white work, the yarn broke 80.6 pounds, on the oiled cotton, and 79.6 pounds on the unoiled stock. On the colored work, the breaking strength was 170.08 pounds on the oiled stock and 168.06 pounds on the un-oiled stock.

Continuous Strippers on Cards.

Chairman Corn next brought up the matter of using continuous strippers on cards. D. E. Gaillard, of Balfour Mills, Balfour, N. C., reported on this, saying, "I find very little difference in the amount saved with the continuous stripper as against the old-fashioned stripper. There is about .57 per cent saved in the amount of waste on 20 hours of running, and that is about all I can get out. We do not think that with the continuous stripper we get as clean a sliver or as clean a roving, and the cloth doesn't look as clean as it does with the regular stripper. We strip our cards three times a day on the regular strippers, and once a week with the continuous stripper.

"The breaking strength, from two cards, one with the continuous stripper and one with the Saco-Lowell stripper, is as follows: Out of twelve weighings, the yarn averaged 29.59s, with a breaking strength of 61.33 pounds on the old stripper, and 29.34s, with a breaking strength of 61 pounds on the continuous stripper."

Mr. Link of the Winnsboro Mills reported a breaking strength test, with the continuous stripper and various types of wire, showing straight wire to break 182.42 pounds, the knee wire 184.2 pounds and the metallic wire 188.8 pounds.

Different Weight of Sliver on Drawing Frames.

The chairman next asked for discussion as to why it is some drawing frames will make lighter sliver than others. He called upon W. P. Leister, of Walhalla. Mr. Leister said, "if you are using metallic rolls and they are the same size, and the collars are the same size, and the teeth are meshed the same, and the sliver that goes in the back is the same, I do not see why it should not come out the same."

Mr. Whitmire, of the Brandon Mills, said that sometime ago he had an unusual experience with two frames running side by side, same speed, same size rolls, with two teeth difference in the draft gear and three teeth difference in the tension, and he got a different weight. A member suggested that there was a difference in the size of the trumpets, but Mr. Whitmire said these were the same. He said that if he changed rollers, the variation would follow the roller

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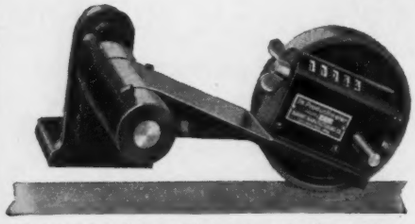

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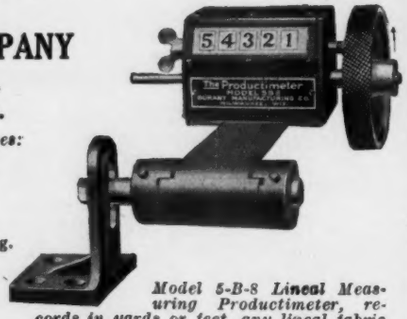

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to whatever frame it was put in.

Draft Gears on Drawing.

The chairman next asked as to the practice of those present as to running the same draft gear on all drawing frames, and it was apparent that this was not done by those present. Mr. Stilwell indicated that he changes draft gears on the drawing to keep his numbers, and Mr. Duncan wanted to know how this would keep the weight in the spinning room. Mr. Stilwell said that he had not changed a draft gear in the spinning in three years, and had not changed the crown gear on speeders in the last six months.

Robert Huskey reported an experience on drawing frames here with two drawing frames that are near humidifiers running lighter than the others. It was difficult to understand this, as it was pointed out that the frames near the humidifiers should run heavier. Mr. Hunt of the Marion Manufacturing Company pointed out that after all, the additional weight near humidifiers amounts to nothing but water, and that this will come out later on in the mill.

One Process Drawing Versus Two Processes.

The discussion next went into the question of using one-process of drawing instead of two. Several men indicated that they are using one process drawing on numbers ranging from 6s to 30s, and Mr. Dilling said that he is using it in one mill on 90s. Marion T. Grimes asked for the result Mr. Dilling is securing. He said that he is trying to run one-process on 30s, but does not get the same breaking strength.

"We have one mill on single-process drawing and one on two-process," responded Mr. Dilling, "and the chances are that if for the past several years we could have put in the second process, we would have done it, but at the same time I do not believe we could get more uniform numbers, and so long as it is running uniformly, I see no reason for putting in two processes." Mr. Dilling stated that his front roll speed is around 200 to 220 r.p.m.

Mr. Grimes explained that his mill was started on two processes of drawing, and that he has since added 20 cards without putting any additional drawing in, which has made him speed up, or else put in single-process drawing. He said that for a few months now he has been running single process and has found on each test that the breaking strength of the yarn is lower, and he was interested to know what to do in order to secure as good a breaking strength on the single process. Mr. Dilling pointed out that he has combers in his mill, and that this undoubtedly has some influence on it.

Card Room Changes for Long Draft Spinning.

Mr. Corn next brought up the question of "What changes are necessary in the card room when putting in long draft spinning?" Marion T. Grimes was the first to respond, saying, "We did not do much of anything, except to heavy up on the roving. I have five frames on long draft, and made a little bit heavier roving for them. We did find that our roving was not drawing so well and we cut the twist a little bit and ran it that way, but we ran that on all of our frames."

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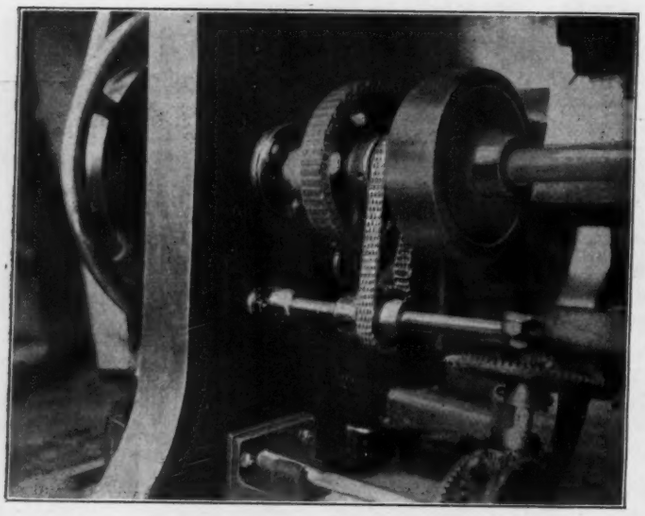

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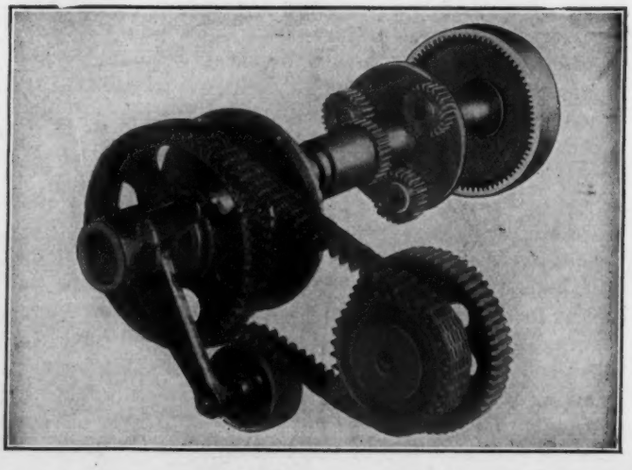

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"I think one of the first things needed is to take out twist for the long draft," said Mr. Dilling. "That can be very easily done because you can make a heavier roving and reduce the speed, and that will enable it to run better, and that enables you to run with less twist and that helps long draft."

J. L. Picklesimer, of Piedmont, S. C., said that he just took out the speeders and ran the roving from the intermediates, taking out a little bit of twist in the intermediate roving.

A. H. Cottingham, general manager, Victor Monaghan Mills, stated that, "there is nothing you should do that you should not do anyway. After we had long draft in, we cut the spindle speed on all of our speeders, probably about 12 per cent on all of our fly frames. We found that we had too much twist in all of our work, and our regular spinning and the long draft ran a great deal better with less twist. You should run with just as little twist as is necessary to keep it from breaking back anyhow." Mr. Dilling agreed with these statements. Mr. Cottingham continued by saying that they took out about six teeth of twist on 5.50 and 6.00-hank roving, and cut the spindle speed on the fly frames from 1,250 to 1,050 r.p.m., and had less ends down, with better satisfied help, and a greatly reduced supply bill.

Cork Rolls in the Card Room.

The chairman next brought up the subject of using cork rolls on slubbers, intermediates and speeders. Mr. Bayne of American Spinning Company reported that, "we started on cork rolls last June, and only put them in on the front rolls. Today we have around 4,000, replacing with cork as the leather gives out. I find that we get about 50 per cent less hard ends on the cork rolls, and our roving looks just as even, and, by the way, since we started in putting in these 4,000 cork rolls, we have not lost a single roll."

W. R. Connelly, of the Pacific Mills, stated that they have cork rolls in four of their card rooms, some frames with all three lines on cork and some with cork on the front line only. He said that if a cork roll is made right, it will stand the buffings, but that a man must be careful as to how long cork rolls are run. One of the card rooms, he said, has been running with the cork rolls on speeders for about four years, day and night, and they have not lost a roll or changed a roll. Another room, he said, has cork rolls on all three lines that have been running for two and a half years. He said that running the rolls a year, and then rebuffing them three times, they will run for four years. He said that they would run for a year all right and in good shape, but if they run longer trouble will develop.

Mr. Whitmire reported that he has cork rolls on two slubbers, two intermediates and two speeders, and that they have been running here for about one and a half years and that they are all in good shape. He said that he coull tell no difference in the evenness of the work. One man reported that he had had difficulty with the cork matching at first, but finally got this straightened out.

The question as to the comparative cost of cork and leather was asked, and it was pointed out that the cost

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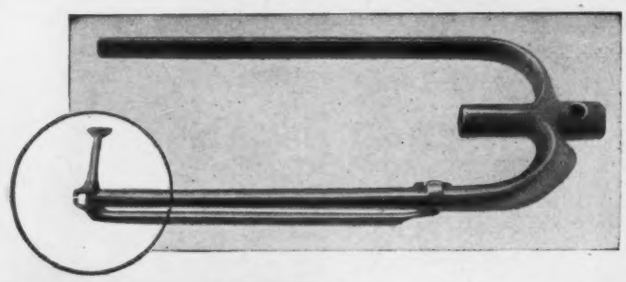

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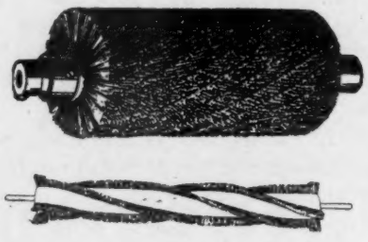

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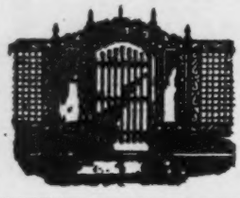

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is about double on the cork initially, but that the life of the cork is considerably longer, with three buffings, as pointed out by Mr. Connelly. Mr. Murdaugh said that they have 24 slubbers and 35 intermediates converted into speeders on cork, and, "we think they are fine."

"Twist Multiple" and "Twist Per Inch."

There was a brief discussion here by H. H. Willis as to the origin of twist multiple, as against the term "twist per inch". Mr. Willis pointed out that practice in trade papers and elsewhere, as long as 30 years ago, showed the use of the term "twist per inch" and also "twist multiple". He pointed out that the terms were as a matter of fact interchangeable, and that it was a simple matter to convert an expression from one term into the other, knowing the constant and the number of the yarn, etc.

Keeping Numbers Straight.

There was a brief discussion here as to means of controlling numbers. Several present indicated that they are using the method of regulating the weight of picker laps in accordance with a scale. Mr. Elliott of Pacolet Mfg. Co., recommended the use of the bone-dry method of drying out a number of drawing slivers in an oven to determine the bone-dry weight, and adjusting according to this, that is the actual amount of cotton that is in the sliver. Mr. Hart of the Ranlo Mfg. Company also endorsed the bone-dry method, stating that he is getting excellent results with it. Mr. Snoddy of the Marion Manufacturing Company, states that he uses the regain indicator in his picker room and that this helps him wonderfully in keeping his numbers. Mr. Harrington said that, "we start in the picker room and set the scales to the relative humidity, six times a day. We work on a conditioned basis, cutting the drawing twice a day, and weighing it to a 6½ per cent basis. One man does the whole work, so that he knows if his intermediate runs heavy today, that he will have to change the speeder tomorrow, etc."

E. G. Waits asked whether it is a wise idea to cut the work and reduce the weight of the roving during rainy weather, when it has run heavy on account of extra humidity. The chairman and T. B. Rector, a cloth room man, both pointed out that it is best, in rainy weather, to leave the card room weights run as they will. Those advocating the bone-dry method pointed out that if this system is followed there will be no difficulty along this line.

This discussion practically concluded the meeting and the convention was adjourned with thanks to the authorities at Clemson College for the courtesies extended.

"Be up and doing or you will be down and done. Slang! Yes, I know it, but it also may be classed as pretty doggone good advice to a lot of overseers and superintendents who are sort of drifting along on their jobs just because right at the moment the "boss" is not raising he—ll, as Ring Lardner puts it, about something. Look out! First thing you know you will think a ton of brick has fallen on you.

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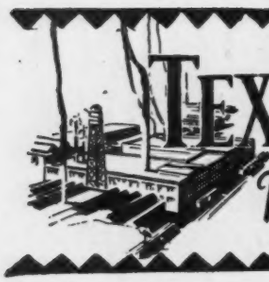

TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

5. The Bahnson Master Control—Bulletin No. 301, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By The Bahnson Company, Winston-Salem, N. C.

6. "Cotton" Weather Vein, 32 pages; "Rayon" Weather Vein, 40 pages; house publication, illustrated. Bulletin 58, 80 pages, illustrated; **Manufactured Weather**—the automatic control of air conditions within buildings. Carrier Engineering Corporation, Newark, N. J.

7. Circulating Spindle Winder—Pamphlet on winding all kinds textile threads showing new principle, by Abbott Machine Company, Wilton, N. H.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville, Spinning Ring Co., Whitinsville, Mass.

12. The Pick Method of Weaver Wage Payment—Booklet, 20 pages. A practical manual giving full information and tables on this method of payment. By the Durant Manufacturing Company, Milwaukee, Wis.

13-A. Equipping Modern Textile Plants—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

13-B. Dyed in the Truth—Vols. I and II. Reprints of advertisements of special interest to textile dyers. Describes equipment and uses of Monel Metal in meeting metal problems of the industry. The International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

14. Emerson Conditioning Ovens—2 booklets on conditioning of textiles, or determination of the amount of moisture in textiles. Issued by Emerson Apparatus Co., Melrose Highlands, Mass.

15. Saving Labor, Material and Power in the Textile Industry—Bulletin No. 133. Illustrated. Controlling, Recording and Indicating Instruments in textile mills. Temperature, Pressure, Humidity, equipment layouts and descriptive applications. The Foxboro Company, Foxboro, Mass.

16. Tycos Instruments for the Textile Industry—Catalog, 84 pages, illustrated. Shows instruments for every application in the textile industry, specifications, prices, diagrams and installation data by Taylor Instrument Companies, Rochester, N. Y.

17. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2789 Greenview Ave., Chicago, Ill.

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20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

27. The Seven Factors of Belting Economy—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 38 Ferry Street, New York, N. Y.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31. Aluminum Paint—**The Coat of Metal Protection**—Booklet, 46 pages. Illustrated. The protecting and light reflecting qualities of Aluminum paint; its advantages to textile industry; where it is used; specifications. By Aluminum Company of America, 2400 Oliver Bldg., Pittsburgh, Pa.

32. Flooring, Open Steel, Area Gratings and Steps—Folder, 6 pages. Illustrated. For platforms, walks and stairs; non-slipping. By Kerlow Steel Flooring Company, Jersey City, N. J.

33. Cast Iron Columns—18-page booklet on use of cast iron columns in mill construction. By National Cast Iron Pipe Co., Birmingham, Ala.

35. Seating Equipment—Automatic, adjustable, ten inch height adjustment, all steel, mill and factory seating specialty, illustrated booklet, ten pages. Vitek Manufacturing Company, Omaha, Nebr.

36. Hosiery Inspection, Seamless and Full Fashioned—Illustrated folder. Also describes new Leg Examining Machine for full fashioned ladies' stockings. Edward R. Ammon, Reading, Pa.

39. Trend of Sales of Silk, Rayon and Cotton in the Piece Goods Departments; twenty-four-page booklet; prepared by DuPont Rayon Company in conjunction with National Retail Dry Goods Association. Copy furnished without charge by either of above. DuPont Rayon Co., 2 Park Ave., New York, N. Y

40. The New Competition in Color—**20 page illustrated booklet.** Discusses future trends in business and their significance, present trend toward fast colors in textile industry and opportunity this trend offers for increased profits if properly utilized. By Franklin Process Co., Providence, R. I.

41-A. Arizona Pima Cotton — Origin; planting, irrigation, picking, merchandising and distribution methods. By E. A. Shaw & Co., Inc., Boston, Mass.

41-B. Sudan Cotton—Growing districts; irrigation, merchandising and distribution methods. By E. A. Shaw & Co., Inc., Boston, Mass.

42. Factoring—Booklet, 11 pages. Summary of Factoring Service provided for Manufacturers of Textiles. By Textile Banking Company, 50 Union Square, New York, N. Y.

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

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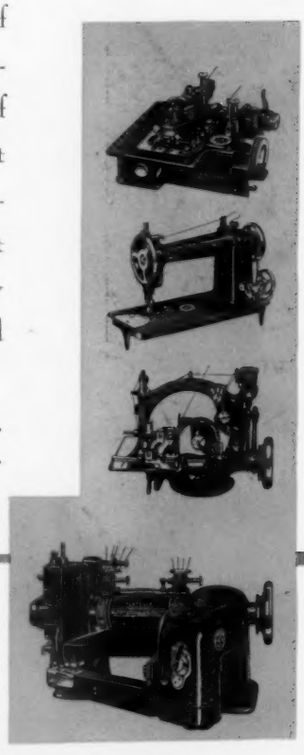

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Systems Used *in* Manufacturing *Full-Fashioned Hosiery*

By C. H. Baxter

Part One

THIS ARTICLE by Mr. Baxter shows and describes the use of the forms necessary in transforming the yarns into grey full-fashioned stockings. The next article in his present series will take up the story at this point, and discuss the forms, records, etc., for sending goods to the dyehouse, boarding, final examining and keeping dyed stock records. It will also explain how to keep pay-roll figures and how to keep records in the office to show how many goods are available at all times for orders.—THE EDITOR.

IN THE MANUFACTURING of full-fashioned hosiery, like any other manufacturing industry, various systems must be used for the purpose of perpetual inventories, costs, proper size assortments, payroll, and a check on each operation. However, too much system sometimes interferes with production and sometimes creates mistakes instead of helping to eliminate them.

In any manufacturing plant, one must first realize that the average employee is not a trained efficiency expert, cost accountant, or bookkeeper, and therefore the various systems used should be such that they are kept by trained experts only. These experts should be the ones to do the checking and figuring and see that each system or method is done as per instructions.

In this article I want to explain many of the systems and methods that I know are used for the manufacturing of full-fashioned hosiery, which will enable anyone to have a record and check on all operations and materials used and at the same time have the systems so simple that anyone with a fair education can do the work of keeping records accurately.

Record of Raw Materials.

Let us first start at the beginning of the manufacturing of full-fashioned hosiery, and that is a record of raw materials in stock. To operate successfully, one should always keep a record of silk and cotton available for use and a perpetual inventory of these items should be kept. Unless such a record is kept, there is always the danger of being short of material, causing loss of production, or having too much material on hand, which would tie up money that could be used elsewhere.

INVENTORY OF MATERIAL

CASE No. 1201 KIND SILK COTTON 50/2 DATE RECEIVED May 1

STOCK		TAKEN OUT		BALANCE IN STOCK	
DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT
May 1	250-0	May 3	75-0	May 3	175-0
		May 6	60-0	May 6	115-0

Fig. 1.

In the first place, there should be a raw material stockroom, where all raw materials are stored. The stockroom should be in charge of one person and all materials received or taken out of the stockroom should be recorded. As most manufacturers of full-fashioned hosiery buy their silk and cotton yarn in case lots, it is a simple matter to always have a perpetual inventory record by using the case number and making the deductions of the number of pounds taken from the case for the knitting machines.

A simple method of keeping a record of raw material is by having a separate card for each case received. On the card is placed the case number, kind of material and weight. Each time that material is taken from this case, the amount should be weighed and entered on the card. This weight should be deducted from the balance available and the last figure of balance available is the inventory of the material available for use. Each day the person in charge of the stock room should submit a report to the person who purchases the material, of the amount of material taken from stock and the amount available for use and through this report, one can always tell when it is necessary to order more material. The Material in Stock Card, shown in Fig. 1., is a form

DAILY REPORT OF MATERIAL TAKEN FROM STOCK AND BALANCE IN STOCK

DATE May 2

KIND OF MATERIAL	TAKEN FROM STOCK	BALANCE ON HAND
50/2	75	175-0
70/2	none	225-0
7thd	50	100-0
5thd	75	25-0

Fig. 2.

DAILY REQUIREMENTS OF MATERIAL FOR KNITTERS

DATE May 2

MACHINE NUMBER	KIND OF MATERIAL						
	4 THD.	5 THD.	7 THD.	50s/2	70s/2	80s/2	100s/2
1			18 cones	6 cones		12 cones	3 cones
2	24 cones				20 cones		12 cones
3		16 cones		10 cones		10 cones	

Fig. 3.

that can be used for this work. When the case is received the Case Number is entered under the heading of Case Number. The kind of material is entered under the heading of kind and the weight is entered under the heading of weight received and the date when received.

This weight should also be entered under balance available. Each time that material is taken out of the case, it is entered under the heading of delivered to operators. The amount delivered should then be deducted from the amount of balance available and the last figure in the column of balance available is the inventory of material available for use.

For the daily report of the amount of material received taken from stock and available for use the form in Fig. 2, Daily Report of Material Used, will show what form can be used. By checking each day the amount of material of each kind that is used per day, the person doing the purchasing can tell the amount of material of each kind that is being used over a period of time and therefore can always purchase the approximate quantity needed without tying up too much capital or being short of material.

The next system to be used in connection with full-fashioned hosiery manufacturing is the matter of supplying the knitters or other operators with materials for use. I know that some mills have the knitters make out a requisition for their needs each day, but this is something that I have found is not the proper method to use. The argument presented is that the knitters should know what their requirements are and therefore should do the ordering. In my opinion, the knitter's job is to knit hosiery and that enough material should be given to him to take care of one day's production. Where knitters are allowed to do the ordering I have found that some have no idea of how much material is used for one day's production, and will either order too much or not enough.

By allowing knitters to do the ordering, no check is made on the amount of material they already have on hand and the result is that one must rely entirely upon the knitter to use up as quickly as possible all material ordered and not have it lying around. In my opinion, the foreman is the man who should order the material needed for each machine and also see that the knitter received the material that was ordered

EACH OPERATOR MUST COUNT
EACH DOZEN AND MARK TAG
WHEN DOZENS ARE SHORT OF COUNT

ROUTE TAG Nº 1
STYLE Nº 700 SIZE 8½
ORDER Nº 122 DOZ. 5

OPERATION	OPERATOR'S NAME	DATE	STOCKINGS SHORT
LEGGING	J. Doe	5/2/30	
TOPPING	E. Jones	5/9/30	
FOOTING	T. Smith	5/9/30	2
LOOPING	A. Elder	5/10/30	3
SEAMING	C. Marks	5/11/30	3
CLIPPING	L. Parks	5/12/30	3
EXAMINING	J. Tanner	5/14/30	4

TAG Nº		
1	EXAMINER	DATE
TAG Nº 1	CLIPPER	DATE
TAG Nº 1	SEAMER	DATE
TAG Nº 1	LOOPER	DATE
TAG Nº 1	FOOTER	DATE
TAG Nº 1	TOPPER	DATE
TAG Nº 1	LEGGER	DATE

Fig. 4.

LEGGER AND FOOTER ORDER

ORDER Nº 122 DATE May 2

STYLE 700 SIZES DOZENS 100

8½		9		9½		10		10½	
TAG Nº	DOZEN	TAG Nº	DOZEN	TAG Nº	DOZEN	TAG Nº	DOZEN	TAG Nº	DOZEN
1	5	3	5	7	5	14	5	19	5
2	10	4	5	8	5	15	5	20	5
		5	5	9	5	16	5		
		6	5	10	5	17	5		
				11	5	18	5		
				12	5				
				13	5				

Fig. 5.

for him.

Storage space should be provided for each knitter for the material ordered. Each morning the foreman should check over each machine and see what is needed in material and at the same time check up the amount of material that is in the storage boxes of the individual knitter. The form in Fig. 3, Material Requisition, can be used for this purpose and then given to the person who delivers the material to the knitters. If during the course of a working day, the knitter requires additional material, the foreman should be notified and he should then find out why the knitter is in need of more material before additional material is given to him. Losses through lax methods of giving out material is great and here is one place where care and supervision is always needed.

The next system needed is one in reference to the routing of work throughout each operation, beginning with the legging operation. To operate a routing system so that one will always know where certain lots of hosiery can be located and at the same time prevent any tie-up in certain operations, it is necessary to have what might be called a central stock room. In this stock room, bins should be built to hold the unfinished work, as well as the work ready for dye. A bin should be provided for each legging machine, and for all other operations, bins should be provided to hold each style number separate.

In starting a legging machine on any particular style number, an order should be given to the legger, of the number of dozens that are to be made on this style. An order number should be given with each order and a duplicate of this order should be kept in the stockroom. The legger should also receive with the order a number of tags called route tags, on which is placed or written the order number, style number and the number of dozens each bundle must contain. I find that an order for one hundred dozen for a legger is the largest order that should be given to a legger at any one time and that five dozen should constitute a bundle. Therefore, in giving an order to a legger for a hundred dozen, twenty route tags should be given also. Of course, at the end of each week a legger may not have the full bundle of five dozen ready and in a case of this kind, the collector of work should have blank route cards and make out a separate route card with the order number and style and write the actual number of dozen that are handed in on the route card. The Route Cards, as shown in Fig. 4, are perforated at the bottom of the card, for each operation and when a legger delivers five dozen, the collector tears off the perforated part of the legging operation and gives it to the legger, which is the legger's receipt that he delivered five dozen to the collector.

The legs collected by this collector are put into the stock room and put into the legger's bin and the amount of dozens are recorded on the duplicate order in the stock room. When a legger has finished the order, he should return the order and any unfilled route tags to the stock room and no new order should be given to him until he returns the old order. The drawing in Fig. 5 shows a form that can be used for the legger order and also in Fig. 6, the form used for the duplicate order held in the stock room.

The reader will note that on the duplicate order form that this order is used for all operations, including examining or until goods are ready for dyeing, and at the end of the order is a column to be used for marking short in count. The purpose of having this column is to see how many stockings are short in count through spoilage or miscount. This gives one a check on this item and if the spoilage or damage is too great, then an investigation should be

A few of the many Fidelity Multi-Design Machines in operation in the plant of the Phoenix Hosiery Company, Milwaukee, Wis.

(Fabric and mechanical patents pending)

FIDELITY MULTI-DESIGN MACHINES have met the test of practical operating conditions in installations, both large and small, in every hosiery industrial center in the world.

FIDELITY MACHINE CO.
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PHILADELPHIA, PA.

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STOCK ROOM ORDER

ORDER Nº 120 STYLE 700 DOZENS 100 DATE May 2, 1930

LEGGER			TOPPER			FOOTER			LOOPER			SEAMER			CLIPPER			EXAMINER			SHORT IN COUNT		
TAG Nº	SIZE	DOZ.	TAG Nº	SIZE	DOZ.	TAG Nº	SIZE	DOZ.	TAG Nº	SIZE	DOZ.	TAG Nº	SIZE	DOZ.	TAG Nº	SIZE	DOZ.	TAG Nº	SIZE	DOZ	TAG Nº	SIZE	SHORT
1		5	1	8½	6	1	8½	5	1	8½	5	1	8½	5	1	8½	5	1	8½	5	1	8½	4
2		6	2	8½	6	2	8½	5	2	8½	5	2	8½	5	2	8½	5						
3		6	3	9	5	3	9	5	3	9	5	3	9	5									
4		5	4	9	5	4	9	5	4	9	5												
5		5	5	9	5	5	9	5	5	9	5												
6		5	6	9	5	6	9	5															
7		5	7	9½	5	7	9½	5															
8		5	8	9½	5	8	9½	5															
9		5																					

Fig. 6.

made. By having the operations on one card, it also prevents certain bundles from being mislaid because if the entering is done accurately on the order, it will always show when a bundle number is not being finished in a certain operation.

The next operation is the footing of hosiery and the following method is used for the continuance of routing the order. The footer is given an order with the same order number and style as made by the legger (see Fig. 5) and the footer is given the size assortment. Here is where the importance of having separate bins for each legger enter into the manufacturing of full-fashioned hosiery. In the footing operation, many seconds caused by poor matching of the stitch of the legs can be avoided, when a footer will foot one legger's work at a time instead of three or four legger's work, as is done in some mills. In one of my previous articles, I wrote about footing the legs with the same lot of silk, and by doing both of these things, the percentage of seconds will be reduced.

When the footer receives the order, the size assortment is entered on the duplicate order in the stock room, Fig. 6. The footer will also make five dozen as a bundle and on the route tags will place the size the bundle of stockings are made into. When the collector collects the footer's work, the perforated part of the Route Card, Fig. 4, under the heading Footing, is torn off and handed to the footer, which is his receipt.

The perforated part under the heading Topping is also torn off and given to the topper as a receipt. When the bundle is delivered in the stockroom, the amount of dozens should be entered on the duplicate order. The form used for a legger order is also used for the footers.

As stated before, in the stock room, bins should be provided for each operation by styles only. When the footer work has been delivered, it should be placed in the footing operation bin holding the certain style made. If possible, it would be well to have the bins for each operation so that a separate bin is used for each size in any one style. This will help a great deal in getting a certain size finished if wanted for a rush order to be sent to dye and also helps to prevent a bundle of any particular size from being mislaid or not being finished.

After the footing operation comes the looping, seaming and examining operations and in each of these operations, the same method is used, as in the footing operation, with the exception that no order is given. As each bundle of a certain size is finished in a certain operation, it is entered on the order card in the stock room. The perforated part is given to the operator, who has finished the operation, as a receipt. The reader will note that on the main part of the route tag, all operations are listed and when an operator finishes a bundle, his or her name should be signed after the operation heading, also date completed. This will show the supervisors, at all times, who the operator was that finished a certain bundle in any particular operation and through this, they can trace any bad workmanship to the proper person.

After the hosiery has been examined in the grey, they are what is called "ready for dyeing." It is necessary to know at all times, how much grey goods there are on hand that can be sent to the dye-house and a perpetual inventory should be kept on this, at all times.

GREY GOODS IN STOCK

STYLE 700 CLASSIFICATION Clean Goods.

GREY GOODS PLACED IN STOCK							GREY GOODS SENT TO DYE								BALANCE GREY GOODS IN STOCK						
DATE	8½	9	9½	10	10½	TOTAL	DATE	COLOR	8½	9	9½	10	10½	TOTAL	DATE	8½	9	9½	10	10½	TOTAL
5/1	25	60	80	70	20	255	5/2	Pink	5	10	20	15	5	55	5/1	25	60	80	70	20	255
5/2	10	25	30	25	6	95	5/2	Tan	7	12	18	16	7	60							
	35	85	110	95	26	350			12	22	38	31	12	115	5/2	25	63	72	64	13	295

Fig. 7.

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TYPE H.S.L.
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65 COURSES PER MINUTE
FULL FASHIONED
HOSIERY
MACHINES

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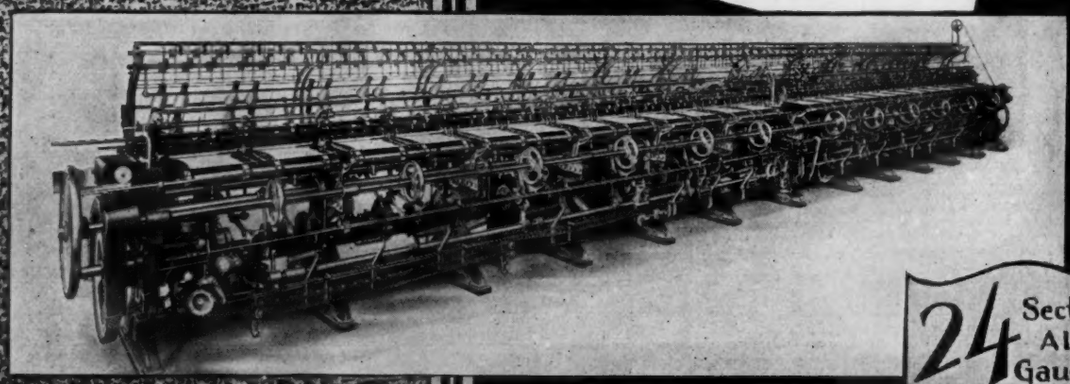

24 Sections All Gauges

STYLE 700

MATERIAL

WELT		SILK IN LEG
COTTON	60s/2	7 thd
SILK	7 thd	

SPLICING		HEEL	
SILK		COTTON	
COTTON	100s/2	PLAITED	100s/2

COURSE SPECIFICATIONS

	COURSES
COTTON WELT	
COTTON BACK WELT	
END OF COTTON	110
END OF WELT SILK	230
WELT TO NARROWING	600
START SPLICING	1250
START HEEL	1350
LEG FINISHED	1500

All silk picot welt
Start of welt to picot 110 courses
From picot to end of welt 120 courses

IMPORTANT

THE LEGGER MUST COUNT THE COURSES PER INCH EACH MORNING ONE HOUR AFTER STARTING SO THAT THIS STYLE WILL BE UNIFORM IN FABRIC AND LENGTH

CORRECT COURSES PER INCH IN THIS STYLE LEG

50 COURSES

Fig. 8.

While grey goods ready for dyeing can be kept in the central stock room, I have found that it is better to have a separate stock room for storing grey goods finished and ready for dyeing, because it prevents the possible chance of mixing these goods so that at times, goods have been sent to the dyehouse that were not examined. Grey goods ready for dyeing also take up considerable room and as they also should be classified as clean goods for light colors, soiled goods for dark colors and irregulars or goods that have been mended, it is better to have one person in charge of this work of taking care of grey goods stock.

In the matter of keeping an inventory of grey goods, a form should be used, showing the number of dozen received into the stock room, the number of dozen sent to dye and the balance of grey goods that can be sent to dye. The drawing in Fig. 7 shows a form that can be used for the information.

When the grey goods of a particular style are received in the stock room, they should be recorded under Placed in Stock. When grey goooods are sent to dye they should be recorded under the heading of Sent to Dye. Under the heading of Balance in Stock should be recorded the number of dozen available for dye and this record is secured by subtracting the goods sent to Dye from the total goods under Placed in Stock. This record is kept up continually and when a form is filled, a new form is made out and the last figures on the old form are placed at the headings of the new form.

This covers practically all the systems or methods one will need for operating a full-fashioned hosiery mill up to the point of having goods ready for dyeing.

There is, however, one more system that should be used up to this point and that is to give the legger and footer a tag, showing the construction of the style number and the correct courses per inch. This is very important in order to receive uniform work at all times and also uniform length. This is especially true with making picot tops, as it is only by giving the knitter the proper number of courses to make, so that the picot will be in the center of the welt before it is turned, that one will reduce the percentage of seconds on picot tops. Before going in the matter of how to give the knitter the information, let me advise that although most modern machines are equipped with course counters, I find that one cannot rely upon them entirely for making picot tops and therefore, it is best to install registering counters on each legger for the main purpose of making picot tops, as well as checking up on the course counter, at all times.

When giving a knitter an order on a new style number, a construction tag, as shown in Fig. 8, should be given the knitter, showing the number of courses for each part of the stocking up to the finish of the stocking. On this tag make note that the knitter count the courses per inch each day so that the stockings will be made uniform at all times.

In my next article I will continue with systems that can be used for sending goods to dye, boarding, final examining and keeping dyed stock records. I will also explain how to keep payroll figures and how to keep records in the office to show how many goods are available at all times for orders.

Before closing this article, I want to say that while I have tried to show how one can keep a record of each operation, I do not want anyone to feel that this can be adopted by every hosiery manufacturer. Each of us have our own problems to solve and no matter what system or method we adopt, changes will have to be made to meet certain conditions that have come up in any one mill. I can only say that in the full fashioned business, there is so

much to look after that unless one has a system of checking each dozen made, under each operation, there are bound to be mistakes and losses that eventually will run into large sums of money. The successful firm is the one which operates its business in a systematic way without overburdening the business with too much system. So whenever a system is installed, be sure that it will work, that it is so simple that the average employee will understand it and at the same time, make it foolproof and keep it accurate.

A History *of* Hosiery Inspection

By Edward R. Ammon

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PART EIGHT

THIS is the eighth of a series of articles by Edward R. Ammon. The first article appeared in the August 1929 number, the second in the September issue, the third in the November 1929 issue, the fourth in January 1930, the Fifth in February 1930, the sixth in March 1930, and the seventh in April 1930. Subsequent installments will appear in later issues.—The Editor.

THE FOLLOWING RESUME enumerates the present day requirements of a device that will correctly expose the defects in ladies' full-fashioned hosiery, also seamless and half-hose.

Full Fashioned.

1st. That it be possible to change the shape of the form, when the stocking is on it, to expand all stitches. 2nd. That it be smooth and small enough to draw the stocking on with a minimum of effort. 3rd. That it thoroughly test all narrowing stitches, both leg and foot. 4th. That it conserve the girl's strength for all day operation. 5th. That it be capable of spreading all stitches to expose defects without stretching them into runners.

Seamless.

1st. Must be possible to change contour after stocking has been placed on form. 2nd. Should draw on with minimum effort. 3rd. Should thoroughly expand corners of toe looping. 4th. Should accomplish the foregoing with a minimum number of moves.

Half-Hose.

1st. In half-hose the joining of the rib top and leg must be thoroughly expanded. 2nd. Thorough expansion of all parts heel, toe, foot and leg.

Fortunately for the hosiery industry, these requirements have been met and today the inspection of hosiery has been perfected to the same degree that the other branches of the industry have been improved. Whereas, formerly the inspector was almost helpless when it came to discovering certain types of defects, today she can examine a stocking and feel absolutely sure that each stitch has been scrutinized, and that no defect can lurk unseen in an unexpanded part of the fabric. How has this been attained?

Possible to Change Shape.

First, a form was invented of a shape that allowed a stocking to be drawn on easily and still spread every stitch sufficiently to expose the simple and easily to be found defects. This had the advantage of discovering the plain open defects without causing them to run. Second, portions of the surface of the form were replaced by levers coming from within which when extended pressed into the irregular interior shape of the stocking and stretched out all stitches. This applied to where the stocking was more nearly square as well as the round sections. Third, any pressure desired could be exerted on the narrowing stitches by the aid of a foot lever which multiplied the pressure of the operator's foot in the proportion of eight to one. Fourth, each operation in the stretching of the fabric is performed by the large muscles of the hand, or leg, with the result a thorough, positive inspection is secured without becoming tiresome to the operators. This very noticeable conserving of the strength of the operator enables her to maintain her physical energy all day and concentrate her thoughts on the one subject of finding defects.

The result is consistent and practically perfect inspection. In our next installment we will analyze the construction of the different stockings, and see how these results are obtained.

STATEMENT

of the ownership, management, circulation, etc., required by the act of Congress of August 24, 1912, of COTTON, published monthly at Dalton, Ga., for April 1st, 1930.

State of Georgia, County of Fulton.

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared John C. Cook, who, having been duly sworn according to law, deposes and says that he is the Business Manager of COTTON, and that the following is to the best of his knowledge and belief, a true statement for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, R. W. Philp, Atlanta, Ga.; Business Manager, John C. Cook, Atlanta, Ga.

2. That the owners are: W. R. C. Smith, Atlanta, Ga.; W. S. Cushion, Cleveland, Ohio; O. A. Sharpless, Atlanta, Ga.; J. C. Martin, Atlanta, Ga.; H. H. Kelley, Willoughby, Ohio; W. J. Rooke, Atlanta, Ga.; T. W. McAllister, Atlanta, Ga.; P. D. Hammett, Chicago, Ill.; L. F. Gordon, Atlanta, Ga.; E. W. O'Brien, Atlanta, Ga.

3. That the known bondholders, mortgagees and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or any other security holders are: None.

4. That the two paragraphs next above giving the names of the owners, stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appear upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs containing statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stock holders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bonafide owner and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

JOHN C. COOK, Bus. Mgr.

Sworn to and subscribed before me this 1st day of April, 1930.

E. L. PHILPOT, Notary Public.

My commission expires March 5, 1931.

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The paths in May how sweet to tread,
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KNITTED wear lends color and comfort to the early spring landscape. Ultra-smartness is the vogue, based primarily upon the excellence of the knitting.

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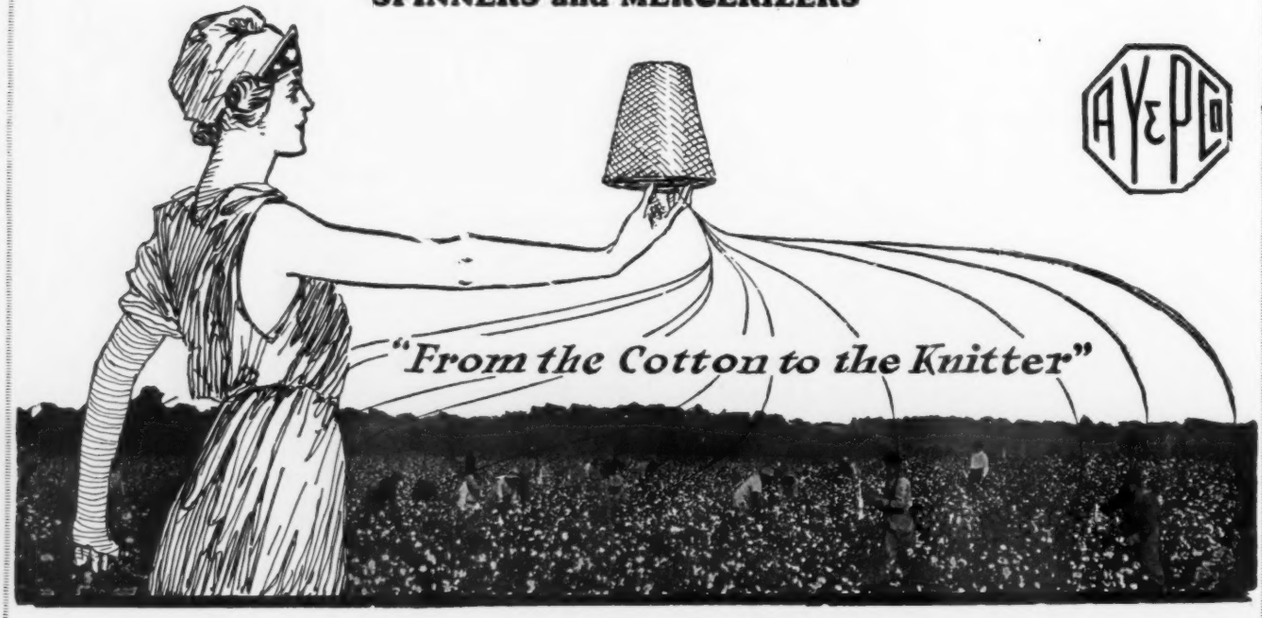

THE KNITTING MILL MAN who writes under the name of OLD KNITTER in this department is pretty much of a philosopher. Of him we can say, however, as a more prominent editor once remarked concerning one of his contributors, "His head is sometimes in the clouds, but his feet are always on the ground."

In this letter, the old gentleman gives SON a fundamental lesson in life as well as in business. His examples happen to apply to a full-fashioned stocking, but the same thought will apply with equal force to circular knit, underwear, or any other product with which there is the probability that a competitor is feeding his chickens with saw-dust, to borrow from OLD KNITTER'S story.

DEAR DAD:

I am mailing you, under separate cover, a pair of full-fashioned hose which has been submitted to us by one of our customers as competition to a number we are supplying him. He claims that he can buy this number 50 cents a dozen under our price. I am at a loss to know how any manufacturer can sell a stocking of this kind at such a low price. Please examine this stocking carefully and tell me how to go about meeting the competition.

Awaiting with interest your reply, I remain with love to all,

YOUR DEVOTED SON.

DEAR SON:

Your letter and sample hose came in today. After looking over the construction of this stocking I am convinced that you don't need to worry about this kind of competition.

I am reminded of the young farmer who, with very little capital, decided to go into the poultry business. He struggled along for several months without showing any profit and then began to try to figure out some scheme that would lessen his cost of production. There was a saw-mill in the community near his farm, and in passing the saw-dust pile he noted teh bran color of the saw-dust and conceived the idea of mixing a little saw-dust along with his chicken feed. He tried it out to begin with on about a 10 per cent basis. The chickens ate it fine, so he kept increasing the percentage of saw-dust until his feed was about fifty-fifty. Then one day an old hen decided to set. He placed 15 nice fresh eggs under her and anxiously awaited the hatching. In just three weeks the old hen came off with six wooden legged chickens and seven woodpeckers, so I am of the opinion that if your competitor takes much more out of his stocking he will soon have it so small that only a **chicken** with a wooden leg can wear it.

In analyzing the stocking I first noticed that it was just 29 inches long and boarded on a very narrow form. It is loosely knit, only counting 44 courses per inch. I also note that it was knit on a 372 needle head. On raveling the foot I find that the heel, sole and toe are knit from a single end of coarse mercerized yarn of very ordinary quality. I can readily see how this man can offer this stocking 50 cents per dozen under your price. With these facts before you there can be no mystery about the proposition.

This reminds me of an experience I had last fall on a hunting trip. I went squirrel hunting and carried negro Jim with me. We were walking along through the woods and I saw the white skeleton of some animal lying just ahead of us. Knowing a negro's natural aversion for any kind of skeleton, I called Jim and said: "See here, Jim. This was a race horse. I can tell by the shape of his head." Jim looked for a minute and said, "How can you tell?" I said, "You see the length and shape of the nose, the large nostrils, the receding narrow forehead, etc." Jim looked amazed and asked, "Boss, whar did you learn all dat?" I replied, "I got that from a study of zoology." We started to walk off and I noticed Jim stumble over something and stop to uncover an object in the leaves, so I started back to see what Jim had found. Jim called to me and said, "Boss, I ain't doubtin' dat you studied zoology, but I has found proof dat your race hoss was a donkey," as he revealed a perfectly preserved hoof with a mule shoe on it.

With this thought in mind, when you approach any mysterious problem, look first for all the tangible evidence lying around before troubling your mind with all the theoretical. My advice to you is to stick to your quality and let your customer stumble over the mule shoe.

With best wishes, I am, as ever, DAD.

VIBRATION HAS ITS PLACE---but,

Its place is *not* in machinery, least of all in full-fashioned hosiery machinery. In the new Wildman Machine, vibration with all its dangers has been practically eliminated. This has been accomplished chiefly by adopting an extra heavy base, a perfectly simple remedy which has more than proved its practicability.

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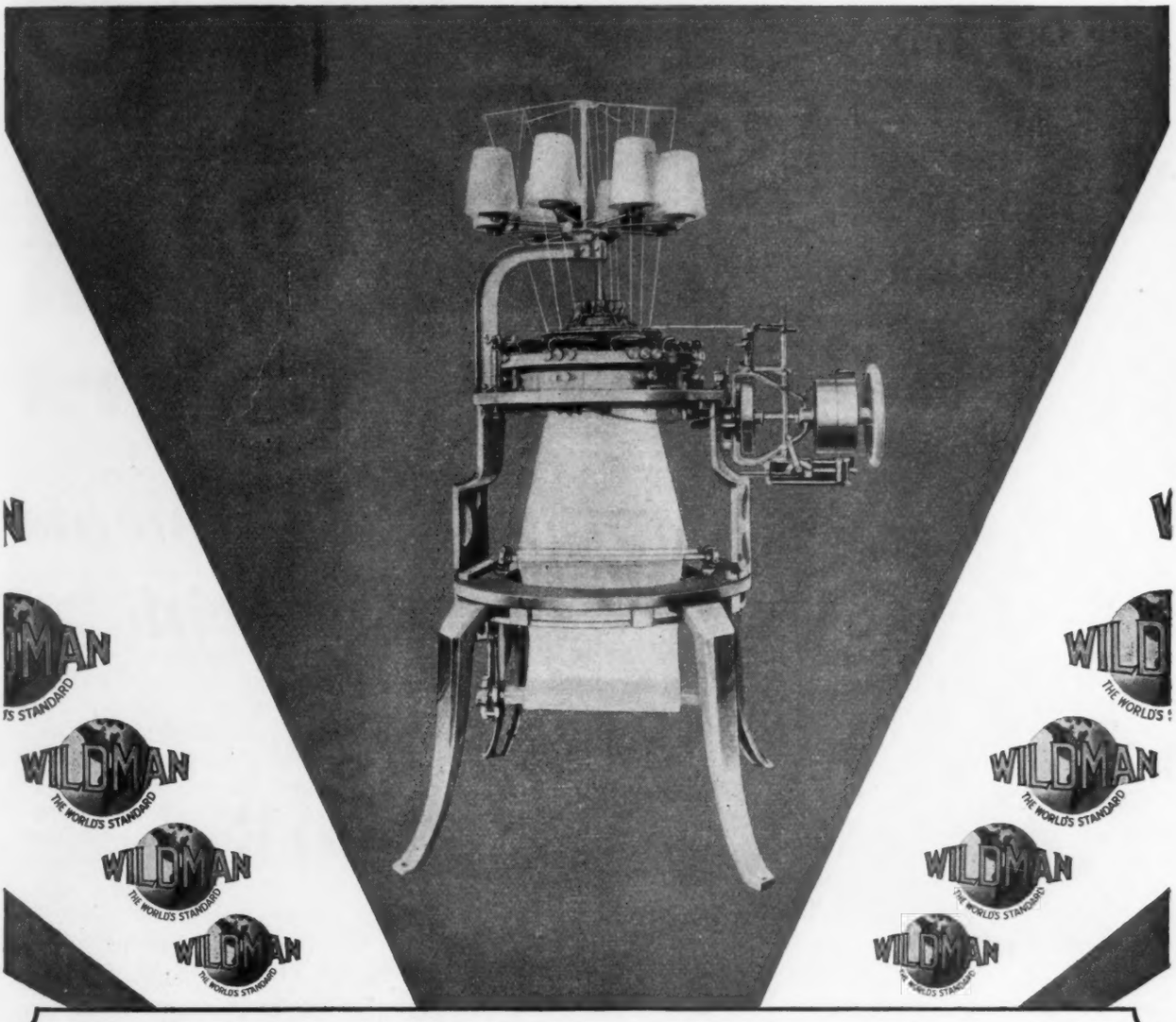

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SLEAZINESS *and* Preparing Silk *for* Knitting

A Compilation of Opinions on these Subjects

THE INFORMATION in this article on sleazy knitting and preparing silk is all taken from letters which have appeared in the "KNITTING KINKS" discussion department of COTTON during the past several months, commenting upon different angles of this subject. It is presented here in this concise and convenient form because of the interest in the subject, and for the benefit of readers who might not have followed the letters quoted as they appeared from month to month.

Another interesting discussion has started, with regard to knitting silk with or without back-winding. The letters on this subject will be found from month to month in the "KNITTING KINKS" department.—THE EDITOR.

A NUMBER OF MONTHS ago we published an article dealing with sleazy knitting, in which the following paragraph appeared:

"The solution over which the silk is wound is another thing in which care must be exercised, otherwise all the goods that the throwster has put into the silk will be washed out by inferior preparations used for making a backwinding solution. Almost all dealers or manufacturers of so-called silk oils have a preparation for making a solution for re-winding silk; but many of them are unfit for use, and whenever used, will cause the finished hosiery to have crepe stitches. Any preparation used for a solution should be free from alkali, and this also holds true in the oils used by the throwster. Any oil or soap with an alkali content has a tendency to soften the gum in the silk, and when this condition exists, the finished product will show sleaziness in knitting. Any solution for re-winding must be such that it penetrates very quickly and also retains this moisture for a long period of time. Water that has been softened is much better for winding solutions, and it is also well to heat the solution slightly before using it for winding, as a warm solution will penetrate better than will a cold solution."

The foregoing quotation is from an article by C. H. Baxter.

Disagrees With Baxter.

In a later issue, a man writing as "CONTRIBUTOR NO. 4113" pointed out, in discussing Mr. Baxter's article, that "many of the so-called de-gumming oils are a curse to a silk dyehouse. They contain strong alkalies such as silicate and soda ash and the action on the silk is too stringent. Others are so weak that the goods are worn sleazy by the time it takes to degum them. * * * The best results can be obtained by de-gumming in soft water with a good olive or oleic soap combined with a small amount of alkali. The amount of soap to use depends on the nature of the silk and the weight and construction of the fabric."

Now later, another man, "CONTRIBUTOR NO. 4123," in commenting upon Mr. Baxter's remarks as quoted concerning the winding solution, says, "I do not agree with him in his statement that this solution should never be alkaline. On the contrary, I would emphatically state that under no circumstances should it ever be acid, and since it is very difficult to have a neutral product of this kind, it is best to play on the safe side and be sure that the solution is on the alkaline side. An alkaline solution will not produce rust on needles, sinkers and knocking-over bits nearly as quickly as acid will. Neither will it produce verdigris on brass parts, and acid will."

Baxter Replies.

Now, in replying to these two criticisms, Mr. Baxter wrote as follows:

"'CONTRIBUTOR NO. 4123' comments on the statement that I made about having the oils and winding solutions free from alkali. He states that oils and solutions should never be acid, and in this I fully agree with him. I might state that I am very familiar with the throwing process of silk, and I have found that an acid condition of silk is about the worst thing that can happen and will cause all kinds of trouble. However, silk in a strong alkaline condition will also give one considerable trouble, because a strong alkaline condition will soften the gum and this means that the silk will flake and stick to the needles and the result is that many times the silk cannot be used at all. I know that it is difficult to secure a strictly neutral product, and while it is better to be on the alkaline side than on the acid side, try to get away from either."

Some Questions on Silk Preparation.

In a still later number, "CONTRIBUTOR NO. 4125" asked five questions concerning preparing silk for full-fashioned knitting which we shall quote in full.

"First. We would like to know if in soaking silk for full-fashioned tram, it is better to use a sulphonat-

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This advantage costs you nothing to install or operate. If you will indicate your interest, we will forward full details. The coupon below brings them. Kindly use this coupon to facilitate prompt handling of your request.

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ed prepared oil or better to use neat's-foot oil and olive oil soap or olive oil and olive oil soap?

"Second. What kind of back-winding solution do you recommend?

"Have you ever used glycerin back-wound solution, and with what results?

"In allowing back-wound silk to stand several hours, how do you prevent sticking of yarn?

"Will a very soft wound cone prevent this?"

Replying to these questions, Mr. Baxter answers in order as follows:

An Answer from Baxter.

"First question. This is a question on throwing and of course is something which could cause considerable criticism or discussion, as all these methods are used by throwsters, and some like one method of soaking and others like another. In answering this question I can merely give the contributor the formula of the soaking I have used for many years. I might say that it has given me the most satisfactory results. The formula of this soaking solution is as follows: A prepared sulphonated neats-foot oil, 50 per cent; raw neats-foot oil, 25 per cent; and tasteless white mineral oil, 25 per cent. The advantages of using a prepared sulphonated neats-foot oil and raw neats-foot oil over olive oil or olive oil soap is that by using these oils there is less moisture content.

"Some olive oil soap is added to this solution and the amount of soap to be used should be determined by the throwster. I know that some throwsters are afraid of using mineral oil, and if such is the case, one can use 50 per cent prepared sulphonated neats-foot oil and 50 per cent raw neats-foot oil. I have always been told that prepared sulphonated oil should be used. I understand that these oils can be prepared by the throwster, but there is a danger unless an experienced chemist does the mixing so that he can determine the degree of sulphonation in the sulphonated oil and the free fatty acid in the raw oil.

"Second question. In answer to this question, I might say that in my opinion the best and safest solution is the same oils that are used in the soaking of the silk, making about one per cent solution for back-winding. There are several good products on the market for back-winding solutions, and I am sure that the readers will agree with me that if the soaking of the solution is right that the same solution should be used for back-winding. A throwster would always be glad to furnish the oil prepared for such a solution and all that is necessary is to use one per cent of these oils with 100 per cent of soft water.

"Questions 3, 4, and 5. All of these questions can be answered as one. Glycerin should never be used in a back-winding solution, as this will always cause stickiness in silk. Winding soft cones over a glycerin solution and using silk as fast as wound over such a solution, will not prevent sticky silk. I certainly would recommend to the contributor that if he is using glycerin in his back-winding solution, that he stop on this at once, as that is without question of doubt the cause of stickiness.

"Some of the prepared compounds on the market for making solutions I know contain glycerin, but its separation with other oils is such that it does not cause trouble. I wish to caution the readers not to use pure glycerin, as this will cause no end of trouble in the knitting. If silk is soaked or conditioned right and wound over a proper solution, it can stand for days, as well as hours, without becoming sticky and by winding cones soft, the silk will leave the cone with an even tension and result in good fabric being made on the knitting machine."

"How Much" Rather Than "What."

In a later issue, "B. R. (MASS.)" also replied to these questions as follows:

"I do not doubt that most of the better known soaking preparations and back-winding solutions have some virtue if used intelligently. Sulphonated oils are in this class and can certainly be used effectively, though they are perhaps less foolproof than the olive or neats-foot oil so generally used. The problem of how to use a given preparation to accomplish certain desired results may often be more important than what to use. For instance, if silk is soaked to render it as soft as possible for the production of smooth and uniform stitch formation in knitting, the gum is quite likely to be excessively softened.

"In this connection, since this man also asked about using glycerin in back-winding, if glycerin is used for this purpose, its hydroscopic properties will cause the silk to retain, or even absorb, more moisture. This might easily further soften the gum so that the yarn would stick badly on the cone after only a few hours. If the contributor happens to be soaking his tram so much that the gum is partly dissolved, and is also using glycerin in back-winding, he may be sacrificing smooth running of the yarn from the cone for more even stitch in the formation. The problem in such a case seems to be more a matter of 'how much' than 'what'.

"This man wanted to know what to do to prevent sticking of the yarn when back-winding silk is allowed to stand for several hours, and asked whether a very soft wound cone would prevent this. The softer winding would lessen the tendency to stick on the cone, but even then, if the full cone stands in the atmosphere where the surface silk dries appreciably, the outside silk will naturally contract and compress the inner layers, causing them to stick fully as much as with harder winding."

Best Worked Out at Mill.

In a later number, "CONTRIBUTOR NO. 4133" answered these questions as follows:

"In answer to his question regarding the relative benefits of using a sulphonated prepared oil, the combination of neats-foot oil and olive oil soap or olive oil and olive oil soap, will say that he will find at least three schools of thought, all equally positive in their convictions. One holding to technically prepared oils by compounding chemists, another making up his own solution of neats-foot oil and olive oil soap, and still another with his pet formula of olive oil and olive soap, and each convinced of the superiority of his product.

"Back-winding solutions are best worked out by

each local mill. Variations in local water conditions make it practically impossible to produce a uniformly satisfactory back-winding solution.

"A backwinding solution of glycerin base can usually be used to good advantage in knitting rooms that have no humidifying system. Back-wound silk should never be allowed to stand several hours after being back-wound, unless the yarn is to be stored in a satisfactory conditioning room where the moisture content of the air can be kept at a satisfactory point so as to prevent either drying of the yarn on the surface or sticking on the cone.

"A very soft wound cone is objectionable as it permits a too rapid drying out of the silk and has a tendency to cause sloughing off of the yarn while being handled or while in the process of knitting. A back-wound cone should have a soft touch, but should not be too spongy."

We forwarded all of this information to one of our subscribers, in response to an inquiry from him as to information on softening silk. After reading this information over, he has sent to us, among other questions, the following inquiry:

More on Silk Preparation.

"We buy our silk from a very reliable firm on what are called aluminum cones, which do not have to be back-wound. These cones are wound in what is called open-wound cones, meaning loose-wound. This silk is to be soaked for ten minutes and then be ready for knitting. The question I want to ask is as follows: Do you think that a glycerin solution is harmful in soaking this silk, using only one quart of bleach glycerin to 50 gallons of water?"

We have secured two replies to this question which have been forwarded to him. One of them is from C. H. Baxter, who writes as follows:

"Anyone familiar with the use of glycerin for the soaking of silk knows that glycerin is highly hygroscopic and many of the sulphonated oils used by throwsters contain some glycerin for the purpose of making the silk somewhat hygroscopic, so that it can hold moisture for a period of time during the knitting operation. As far as soaking the silk in glycerin solution is concerned, I can assure the contributor that soaking the silk in a solution of one quart of glycerin to 50 gallons of water will do no harm to the silk, but might say personally that I do not believe that this is the method to use in the soaking of silk.

"My own experience has been that if one wishes to secure good fabric through dry package knitting that the best method to use is to place the silk in a conditioning room, conditioned through the means of a humidifier for at least 24 hours and through this slow conditioning, the silk will be moistened more evenly and prevent sleaziness. Merely soaking silk for ten minutes in either water or some other solution does not moisten the entire cone of silk evenly and results in dry spots in various places in the cone and it is these dry spots that cause sleaziness when the hosiery has been dyed."

Another man, "CONTRIBUTOR No. 4698," has replied to this question as follows:

"In reply to this point, I would say that I have no faith in the so-called method of direct knitting if the knitter is setting as his final goal, smoother knitted fabric free from sleazy condition. This statement is not based on any prejudice against any particular type of cone or winding, but is based on much personal experience in trying to do what we now consider a fairly impossible thing to do, that is, to make a good smooth fabric on a full-fashioned machine from gum silk without back-winding the silk. Your inquirer states that he is using open wound cones put up on aluminum cones, which are to be soaked for ten minutes and then are ready for knitting. It is possible that he might get fairly good results from such a cone if he would soak the cone in a good soaking solution ten minutes as he says he is doing, and then place the cone in a well regulated conditioning room carrying at least 85 per cent moisture for a period of ten to twenty hours before knitting. Referring to his question about the glycerin softener, I consider this a good product, and no harm will come from its use, and much good will be obtained if it is properly used."

Bulletin on Determining Cost of Electric Appliances.

General Electric Co., Schenectady, N. Y., recently issued a pamphlet containing a chart to be used in determining the cost of operating electric appliances and motors. By laying a ruler on the figure on a line representing the number of watts taken by the appliance or motor, and allowing it to cross a parallel rate line at the rate in cents per kilowatt-hour, the cost in cents to operate for one hour may be read on a parallel line.

Pyrogene Dyestuffs Bulletin.

Ciba Co., Inc., Greenwich and Morton Sts., New York City, recently announced that Card No. 553-A of the Society of Chemical Industry, Basle, has been issued, corresponding to prior Card No. 553, but enlarged by new dyestuffs and fastness tables. They state that only dyestuffs which stand laundering in five grains of soap and five grains of soda at 90 degrees C. for one-half hour, with intermittent rubbing on a washboard are represented in it.

Trend of Silk, Rayon and Cotton Sales.

The tendency toward rough weaves in both silks and cottons is emphasized in the annual report of "Trend of Sales in Cotton, Silk and Rayon," issued by the National Retail Dry Goods Association, and sponsored by the Dupont Rayon Company which provided the funds for the research fellowship in the association. The statistics show the decided gain in fabrics of rough texture, and the buyers' forecast stresses their importance for spring wear.

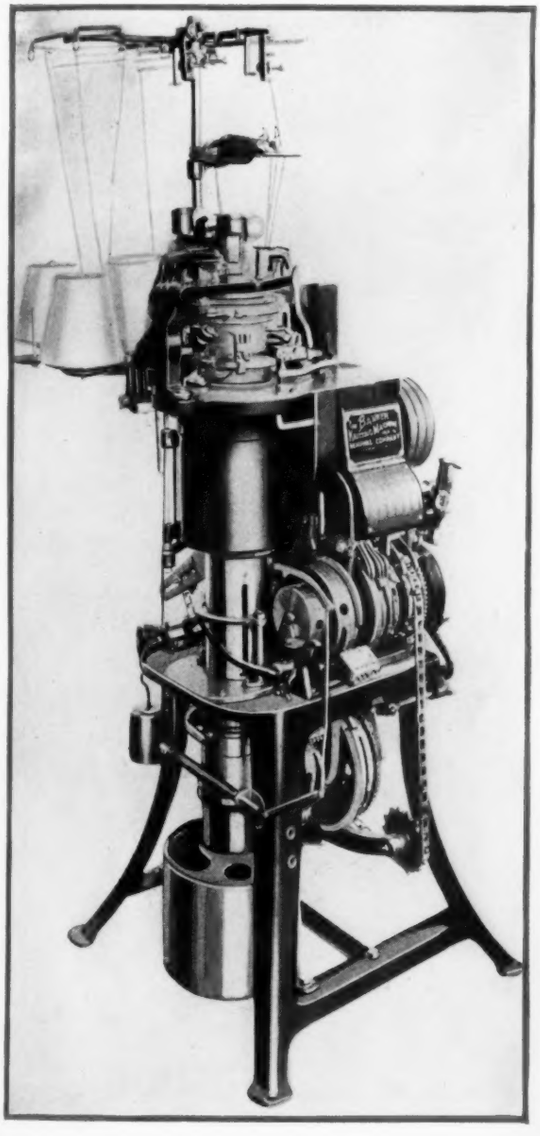
Textile Institute and Style Show at N. C. Textile School.

The annual Textile Institute and Style Show of the Textile School of North Carolina State College, Raleigh, N. C., was held about the middle of April, and at that time prominent speakers addressed the students and mill men attending upon subjects of interest pertaining to the textile industry. Mill men and the general public were invited to attend the exhibition and institute.

O'Brien Equipment Co. to Carry Mason Regulators.

Mason Regulator Co., Boston, Mass., announce the appointment of the O'Brien Equipment Co., 2726 Locust Blvd., St. Louis, Mo., as exclusive distributors of Mason products in Missouri. A complete stock will be carried in St. Louis, it is stated.

THE BANNER *Automatic* RIB MACHINE



FOR HALF HOSE . . . . .
GOLF HOSE . . . MISSES'
RIB TO THE TOE

In the Banner Automatic Rib Machine, Hemphill engineers have more than maintained their rigid standards of simplicity in design and lasting construction. This recent Hemphill achievement provides for accessibility of machine parts, which, in the field of machine design, is only short of sensational. Maintaining the Hemphill policy of building machines to employ all types of yarns, the Banner Automatic Rib Machine knits any yarn or plated combinations . . . any combination of single or broad rib leg . . true rib half hose top in combination with one-by-one or broad rib leg.

BANNER *Automatic* RIB MACHINE

Designed to knit 230-240 courses per minute which is 60-70 more courses than usual with plain rib machines . . . equipped with regular yarn changes, 5 yarn levers and binder . . . can be equipped with banner universal striper.

HEMPHILL COMPANY

Pawtucket, R. I.

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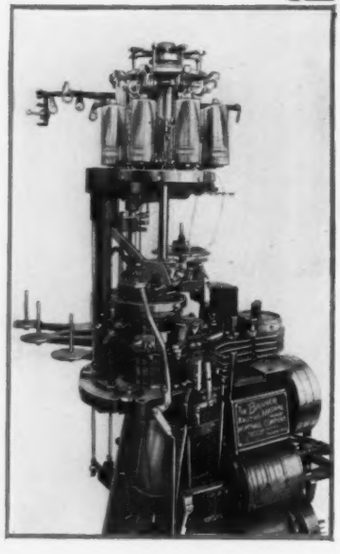
THESE BANNER FEATURES

THE BANNER WRAP STRIPE MACHINE

. . . . *knits the raised effects of hand embroidery*



Equipped with regular yarn changes and binder
Double sole attachment

WITH eight color feeds and a two-color attachment to permit color changes in a vertical stripe or design, the Banner Full Automatic Wrap Stripe Machine knits clocks and all over clock effects which play a most important part in the sale of any hosiery line. Half hose, misses', anklets and ladies' hose.

PERFECT CONSTRUCTION . . NO FRINGE . . NO TRIMMING

HEMPHILL

PAWTUCKET

93 WORTH STREET

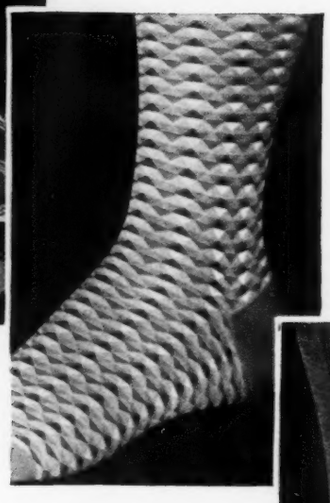
Philadelphia
Chattanooga
High Point, N. C.

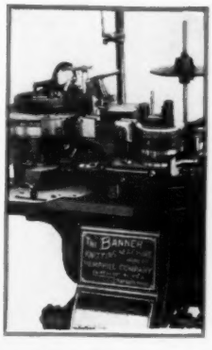
Printed in U. S. A.

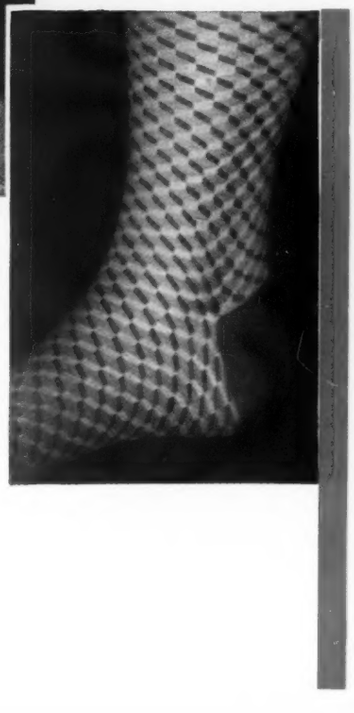
INDISPENSABLE TO . . . .

MODERN HALF HOSE STYLING

THE BANNER 12 STEP REVERSE PLATING ATTACHMENT







INTRODUCING the collapsible drum system of control with single cam adjustment, the Banner 12 Step Reverse Plating Attachment provides a patterning capacity exceeded only by the Banner Jacquard machine. The single stitch patterning ability of this simple attachment is a tremendously important factor in the styling-for-sale of any smart hosiery line.

COMPANY

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NEW YORK

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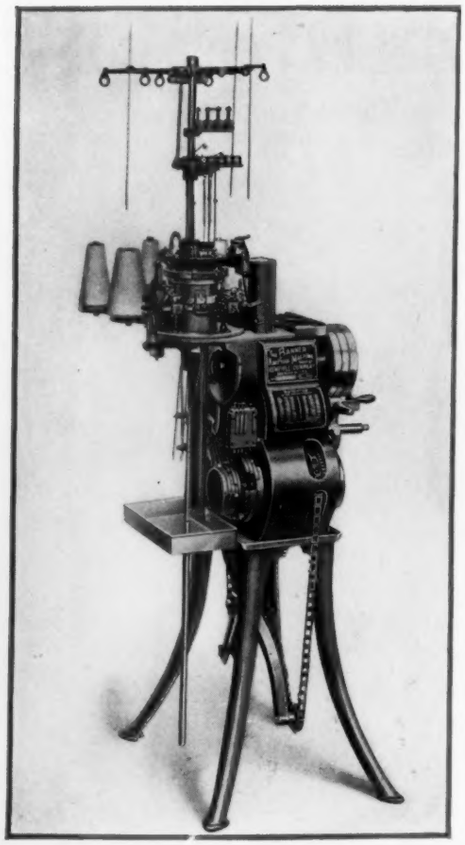
THE IMPROVED SPLIT FOOT MACHINE

an exclusive Banner product

THE improved Banner Split Foot Machine leaves no loose ends nor trace of ragged edge where silk instep joins reinforcement. A separate fashioning device for each section of the hose saves the fixer's time in sizing and contributes substantially to lower operating costs. Broader bearings and improved design permit increased operating speeds and consequent larger production. The Banner improved Split Foot Machine is equipped with the narrow extra high splice and triple toe attachments. Double extra splice at points of extra wear.



PERFECT FINISH "INSIDE-OUTSIDE" ladies' seamless hose

THE Banner split foot machine (3½-300-320-340) provides the only known means for knitting, with salable finish, ladies' "inside-outside" hose without a seam. With the inturned top these hose compete favorably in the highest quality markets. Manufacturers who have not seen this latest Banner advancement, are urged to write for samples. Just ask for ladies' "Inside-Outsides."

HEMPHILL COMPANY *Pawtucket, R. I.*

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Printed in U. S. A.

Discussion on Knitting

(*Continued from page* 756.)

Knitters will find this continuation of the discussion at the Greensboro meeting of especial interest.

At this point, Mr. Winget asked A. N. Hill to take the chair and conduct a discussion particularly relating to knitting subjects. This discussion followed a questionnaire which had been prepared and which was submitted in advance to the knitters of the section. The complete questionnaire appeared on page 711 of the April issue of Cotton.

Due to the small number of knitters present, the discussion on each topic was brief. The first question asked by Mr. Hill was, "How do you eliminate sleaziness?"

W. B. Rogers, of the Durham Hosiery Mills, stated that this was caused by loose knitting, and that, "unless you put the courses in, you will have this trouble. If you are knitting a stocking loose, you let out on the stitches."

Mr. Hill asked next, "Which is better, the two-bath or the one-bath method of dyeing?" Mr. Rogers replied that he has found the two-bath method better, "because this eliminates what we call crinkled silk."

"What is the best temperature to use on forms in boarding, on silk and rayon hosiery?" was next asked. In answering, Mr. Rogers said that they have used both steam and hot water forms, and that they now use hot water forms altogether, on both rayon and silk. He reported that for seven-tram silk, and 150 denier rayon, he uses a temperature of 200 degrees, and on four and five-tram silk, he uses 140 to 160 degrees temperature. This is on ladies' hose, and he explained that each boarder had 24 forms, putting on six and taking off six stockings in rotation.

"Which is the best—daylight or artificial light for knitting?" was the next question. One of the men present said that he prefers "daylight in the daytime and artificial light at night." Specifically, Mr. Hill said that he prefers the Cooper-Hewitt type of light in the knitting room, when artificial light is necessary, and the tungsten type for the finishing department.

"How often do you change the sinkers on finer-gauge work?" was next asked.

"We make it a practice on seamless to change the needles and sinkers every six months," reported Mr. Rogers. Mr. Ball said that on 300 needles spiral Model K machines, he changes once a year.

The next discussion was with reference to the kind of oil to use on knitting machines, and the method of using it. Mr. Ball said that he uses a light oil, and oils the machines when the mill starts up, going back to the sinkers and needles at noon, oiling again at six o'clock, and then the sinkers and needles at midnight, on the night shift.

Mr. Winget asked Mr. Ball if he has any difficulty with oil stains. Mr. Ball replied that he has more or less of this trouble, but that he has found it to be a good practice, in cutting down oil stains, to oil more often and lighter.

D. F. Burns asked whether the men present used the same oil on the needles and sinkers as they use on the shaft and other moving parts of the machine. He said that he understood Mr. Rogers uses a compound on the needles and sinkers and another type of oil on the running parts. Mr. Hill replied that he had not found it satisfactory to use two different kinds of oil. He said he did not like the compound type because this gums up the sinkers and the needles; that he prefers an oil with a medium body.

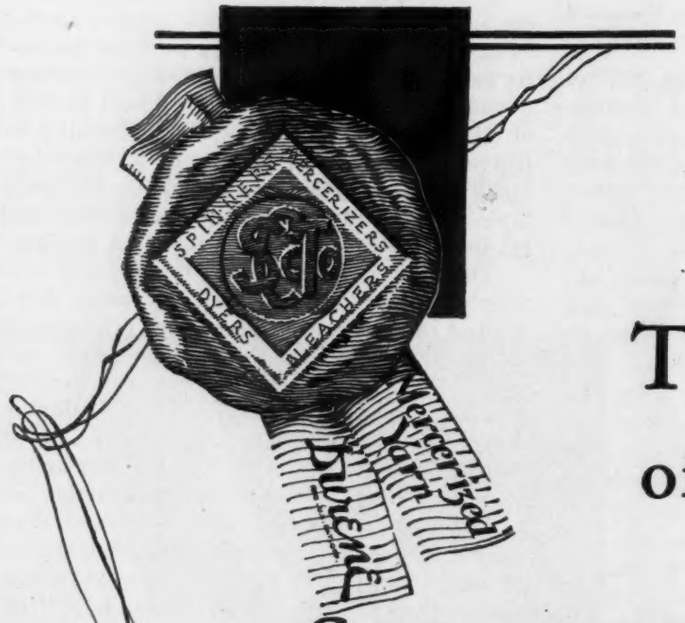
The next question was "How do you condition your rayon for knitting?" In discussing this, it developed that none of those present conditions rayon, as a general practice, receiving the yarn on cones ready for knitting. Mr. Rogers said that they had tried almost every kind, or method, of conditioning, and before going away from the practice, had determined that to soak the yarn in oil for 12 hours, and extract it for one hour, was the most satisfactory method. In answer to a question from Secretary Walter C. Taylor, Mr. Rigers further explained that in the soaking operation, he puts the rayon in bags, rather than soaking it without bags, because putting it in bags keeps the rayon in the same condition as it was when it reached the mill.

This subject caused Mr. Rogers to inquire whether any of the others present had difficulty with rayon on cones showing up in different shades, and the others at the meeting said they had this difficulty at times. No one present could explain the reason for it, Mr. Rogers describing it as the rayon being full of what he called "shot-holes", as if it had been eaten by some chemical in the manufacturing operation.

Methods of reclaiming defective merchandise, etc., were next discussed. Mr. Rogers said that they back-wind their two-ply mercerized yarn, but that their carded and combed yarn goes back for a reworking through a waste machine. Mr. Hill reported also that he back-winds silk and mercerized, but that the half-hose tops are sold as waste, because of the number of knots involved when it is endeavored to back-wind this yarn.

"How do you locate defective needles on a circular machine?" was the next question. Mr. Hill said that he goes to a machine so as to get the light on the latches from one side, so that he can see the rivets, and then reverses it so that the light comes from the opposite direction. Such needles as he cannot locate in this way, he locates by running his finger-nail along the rivets. Mr. Ball said that in sizing their work, he locates defective needles by counting off from the double sole or some other point. He states that they size their work three times a day.

"How do you prevent sinkers from clogging with lint?" Mr. Hill asked next. Mr. Ball said, "we use 175 pounds pressure of air and go over them every day and every night." Mr. Hill added that, "we try to eliminate the clogging up by using a good oil, to prevent them from clogging up, as well as blowing out with air to remedy the condition." There was no dis-



The Seal of

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CHATTANOOGA, TENNESSEE

Spinners & Mercerizers of

Fine combed yarns kept uniformly high-grade by our complete supervision—spinning, bleaching, mercerizing and dyeing all done in our own plants.

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cussion on the next question, "Do you check your needle breakage?"

"Which do you prefer, 23 per cent or 25 per cent boil-off on silk, and why?" was the next question.

"We think 25 per cent runs a little better on the machine, circular knitting," said Mr. Ball. Mr. Rogers said that they usually specify from 23 to 25 per cent, as they do not want it to be under 23 per cent nor over 25 per cent, either on seamless or full-fashioned. It was pointed out here that it is general practice to have the oil tested, through a testing house, before knitting. This testing, it was pointed out, shows that sometimes the oil runs above and below the specified amount of boil-off, with an average of around 23½ per cent.

This concluded the knitting discussion, and the meeting was adjourned for luncheon. After the meal, W. E. Harrelson, director of the Department of Conservation and Development of North Carolina, and Paul Kelly, public relations director of the Department, spoke briefly with reference to cooperation in the work being done by the Department.

The chairman next called upon Smith Williams, sales manager of The Bahnson Company of Winston-Salem, N. C., to briefly discuss the importance of humidity and humidity control in cotton mills as well as the printing, tobacco, and other industries. He urged a thorough and intelligent study of humidification as one of the major problems in the production of good yarn and fabric. He also urged those mills making for sale, to install a proper conditioning room.

Mr. McCombs asked Mr. Williams, "with a regain of 8½ per cent, what degree of Fahrenheit temperature is necessary to prevent sweating in the atmosphere?" Mr. Williams pointed out that this depended almost entirely upon local conditions, such as the yarn itself, the amount of twist, and the time element. He stated that 8½ per cent regain could be secured with 80 degrees temperature, if a long enough time were allowed.

What Causes Smutty Yarn?

The last question discussed asked what causes smut on yarns, particularly at the bottom of the bobbin. A number of men present reported this difficulty from time to time. Out of the discussion on this point, it seemed to be the consensus of opinion that this difficulty comes mainly at mills located in sections thick with other industrial plants using coal as fuel, the soot coming in and settling at the bottom of the quills, because of the length of time occupied in winding on, this being accentuated by the condition of the air forcing the soot to the floor; or at mills during times when coal is being unloaded around the plant; or at mills with a rope drive from the engine room, for example, with an opening into the spinning room.

Various temporary ways of reducing this were reported, one being, sprinkling the coal with a hose while unloading. Mr. McCombs pointed out that mills equipped with central station humidifying systems were not bothered with this difficulty, referring to two adjacent mills, one without the central station apparatus being troubled with this, the other with the central station having no difficulty.

F. C. Todd of Gastonia told of a new builder motion known as the 3-4 filling wind, which starts at the center of the bobbin and covers up, declaring that the man using this builder had gotten rid of this difficulty, because the bottom of the bobbin was not exposed long enough to allow the soot to settle. He said that in winding these bobbins on a Foster winder, this man had found it necessary to lower his spindles about 12 inches in order to get the proper balloon on the yarn from this new type of package. This discussion concluded the meeting, and following some announcements the convention was adjourned.

Among the Knitting Mills

PLANS ARE BEING formulated for locating a full-fashioned hosiery mill in Corinth, Miss.

E. M. Linville, Lindsay Holcomb and Joe Brock recently incorporated a new plant in Mount Airy, N. C. for the manufacture of sweaters and bathing suits. The Pine State Knitwear Co. will be the name of the new concern.

Arrangements for the establishment of a hosiery mill in Statesville, N. C., have been completed by Clarence Stimpson and Fred Guerrant. The plant will produce full-fashioned hosiery and will be in operation in the near future.

Duchess Company, Charlotte, N. C., manufacturers of women's high grade underwear, recently leased additional space in order to increase production enough to take care of increased business.

The Sterling Hosiery Mills, of Forest City, N. C., recently completed moving their machinery to Spindale, N. C., where the Forest City plant and the Spindale plant of this company are to be merged. The finishing and dyeing departments will remain in Forest City until a new dye house is built. It is rumored that a new hosiery mill is to be opened in Forest City this spring.

Lyerly Full-Fashioned Hosiery Mill, Hickory, N. C., have completed their building and ordered machinery. They state that 9 full-fashioned machines will be installed and put in operation just as fast as they are received.

Wyrick Hosiery Mills, Mebane, N. C., after having been idle for sometime, have resumed operations. They are now running a full daytime schedule.

C & M Hosiery Mills, Oxford, N. C., dyers and finishers of hosiery, have installed 20 new hosiery machines, which brings their total to 50.

Morristown, (Tenn.) Knitting Mills, Inc., manufacturers of infant's fine grade hosiery have completed the addition to the plant and have installed 35 new Scott & Williams machines for the manufacture of 320-needle hose; 10 loopers have also been added.

Grey Hosiery Mills, Bristol, Va., with maximum capital of 4,000 shares of common stock and $100,000 preferred, has been granted charter by the State Corporation Commission to manufacture hosiery and knit goods.

It was recently announced that the Southern Mercerizing Co., Tryon, N. C., was putting in a knitting plant with a capacity of 500 dozen hose daily. The machinery is now being installed and the plant is expected to be in operation within a very short time. F. P. Bacon and W. C. Ward will operate the plant. J. B. Carpenter has been engaged as superintendent.

It has been announced that the addition to the Bossong Hosiery Mills, Asheboro, N. C., is to be a 1-story, saw-tooth roof structure, 138x98 ft. building. The engineers on the job are Lockwood Greene Engineers, Inc., Charlotte, N. C. An addition is also to be made to the dyehouse.

The Mount Airy (N. C.) Knitting Co. recently purchased a large amount of equipment from the Conway Knitting Mills, Inc., Oswego, N. Y. This will practically double the capacity of the Mount Airy concern. The company will increase the number of operatives by about 200.

High Speed Winding of Filling Yarns

OSWALD LEVER CO.

PHILADELPHIA, PA.

11th & Cambria Sts. Near N. Phila. Station

The YARN MARKET

Philadelphia, Pa., April 12th, 1930.

DURING the last report period carded yarns reached the lowest level that had been attained by these yarns in some years. It was the opinion of many that this was due to the fact that so many spinners had become a little too enthusiastic about the future market for yarns and had failed to curtail as they should have. During the first part of March there was a very noticeable amount of curtailing on the part of most spinners, however.

The latter part of the last report period also saw a period of stabilization finally reached in the market, which of course was a situation the market had desired for quite awhile. This seemed due to the fact that spinners were doing business on a rock bottom basis.

The first week of the present report period, which was the week of March 17th, was a rather quiet one for spinners and sellers. Yarn sellers' attitude in regards to business recovery was rather two sided. Some had a rather bearish outlook, while others claimed that they had gathered quite a bit of encouragement from recent surveys they had made of general business conditions.

Cotton quotations during this first week made a rather pronounced rally, but yarn quotations seemed totally unaffected by the rise. Carded yarn numbers as 20s-2 and 30s-2 warps were reported below 30 and 35 cents, respectively. These prices represented the lows for these yarns during the past several years. Even at these unusually low prices, very few sales were recorded during the week, but the increased number of inquiries caused sellers to feel that sales would in the near future show an upward trend.

The next week closed out the month of March, and while carded yarn sales during the month were rather disappointing, there were some bright features to the month. Notably among these was the increase in carded yarn rates, which took place during the present week, and marked the first increase in rates of these yarns since last October. The increase in number of inquiries during the month, along with the fact that buying had been below normal, would indicate that the potential market for cotton yarns is rather large. The rather pronounced rally in cotton quotations, taking place during the latter part of March, was the attributable factor in causing the increase in the rates. The increase was certainly welcomed by the spinners, as most of them had been operating for some time at very little, or no profit.

Buying was unusually light during the next week. The majority of buyers seemed to feel that there was plenty of cotton and plenty of yarn, so there was no need of being in a hurry. They seemed to feel that spinners were not justified in having raised carded yarn rates the previous week.

That curtailment in the South was much more general than had been the case for sometime, was the impression received by local cotton yarn factors after rather intimate contact with the spinners of the South for several weeks.

Sales continued to remain too small and unsatisfactory from the price standpoint during the first part of the next week. Yarn spinners continued to exercise the good judgment they have been exhibiting lately by reducing spindle operations rather appreciably. It seems that they have at last realized the importance of keeping the supply down to the demand. Spinners during the latter part of the week advanced asking prices slightly. The majority of buyers resisted these advances, stating that the present prices were commensurable with the prices of the raw product.

Philadelphia prices on April 12th follow:

Single Skeins.

4s to 8s	25	10s	26
12s	26½	14s	27
16s	27½	20s	28 @28½
24s	30½	26s	31½
30s	33½		

Single Warps.

10s	26½	12s	26½ @27
14s	27 @27½	16s	27½ @28
20s	29	26s	32½
30s	34 @34½		

Two-Ply Skeins.

8s	25½ @26	10s	26 @26½
12s	26½ @27	14s	27½ @28
16s	28½ @29	20s	29½ @30
24s	32 @32½	26s	33½
30s	34 @34½	40s	41

Two-Ply Warps.

10s	27½	12s	28
14s	28½	16s	29 @29½
20s	30 @30½	24s	32½
26s	33½	30s	34½ @35
40s	42		

Frame Spun Carded Yarn on Cones—Cotton Hosiery Yarn.

8s	25½	10s	26 @26½
12s	26½	14s	27
16s	27½	18s	27½ @28
20s	28½ @29	22s	29
24s	29½ @30	26s	31 @31½
30s	33 @34	40s	40 @41
30s dbl. carded	36 @37	30s tying in	32 @33

Carpet Yarns.

8s and 9s white warp twist	25
8s tinged tubes	23 @23½
8s part waste	21 @21½

Single Mercerized Yarns.

30s	77	36s	78½
40s	80@ 83	45s	84@ 85
50s	87@ 90	60s	94@ 99
70s	1.10@1.15	80s	1.32@1.37
90s	1.75	100s	2.05@2.15

Two-Ply Mercerized Yarns.

20s	57	26s	59
30s	60	36s	63
40s	65	50s	70
60s	78	70s	92
80s	1.05	90s	1.40
100s	1.70		

Tinged Yarn (Singles).
(ordinary stock.)

8s	21	10s	22
12s	22½	14s	23½
16s	24½	20s	27 @27½

Tinged Yarn (Plys).
(ordinary stock.)

8s	21½	10s	22½
12s	23 @23½	14s	24 @24½
16s	25 @25½	20s	27½ @28
24s	29 @29½	26s	30 @30½
30s	32 @32½		

Mule Spun Carded Yarn on Cones.

10s	31	12s	31½
14s	32	16s	32½
18s	33	20s	33½
24s	36½	26s	37
30s	38	40s	45

Northern Mule Spun Combed Peeler Yarn on Cones.

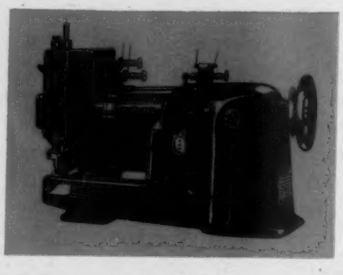
10s	39	12s	40
14s	41	16s	42
18s	43	20s	45
22s	46	26s	47
28s	48	30s	49
36s	52	38s	54
40s	55		

This is opportunity Year for manufacturers who use the FELDLOCK

PLACE competition at a disadvantage by creating new efficiencies in production. Users of the Feldlock do so.

The perfected feed-off-the-arm principle of the Feldlock results in a volume of lapped fell seaming never before attained. It means seam economy—at a time when economy is important.

You will like the fine quality of work turned out by the Feldlock. You will value it for the long service it renders, and the minimum of repairs required. The Feldlock booklet gives facts—please write for it.



Write our Home Office for samples made on the Feldlock, or submit your own fabrics for sample purposes.

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"Machines do their best work with genuine W & G Needles."

WILLCOX & GIBBS SEWING MACHINE CO.

HOME OFFICE: 658 Broadway, New York, N. Y., U. S. A.

What Causes These Drop Stitches?

Here's a new one on us, and if you can throw any light on it, your suggestions will be welcomed.

EDITOR COTTON:

We are having difficulty in making drop stitches in the welt, on our H H machines. It seems as if the latch opener doesn't work. These machines are also dropping a stitch off of the jack needles in the transfer.

We are running 176 needles, 48-gauge, five step reverse sinker plaiting machines, using 15s cotton yarn in the top. The set-up is all right, and the stitch is dropped off of the jack needle when the welt is hemmed and starts the rib. This trouble occurs any place around the welt in both long and short needles. We drop a 14s yarn in the set-up about two revolutions. The transfer drop stitches are on the jack needles, and occur on any of the jack needles. The needles have plenty of friction on them.

I should appreciate any suggestions from readers of "KNITTING KINKS" as to the probable causes of these difficulties, and the remedies for them.

CONTRIBUTOR NO. 4731.

"Don't Blame Sleaziness on the Dyer!"

This man takes up for the dyer in this discussion as to just where this trouble comes from. What's your experience?

EDITOR COTTON:

I was much interested in reading, on page 589 of the March issue of COTTON, the questions of "CONTRIBUTOR NO. 4696," with reference to various phases of full-fashioned hosiery manufacture, etc. There is one particular point in his letter that I would like to discuss, and I will quote this, putting in italics the part I wish to refer to specifically. He said in part:

"If sleaziness is caused from the knitting operation on the machine, why is it that one cannot see the disordered stitches or tight and loose places in the stocking under a magnifying glass? I have at times paid particular attention to one head on the machine, checking the jack springs, jacks, play between the falling bar and sinkers, then when the stocking was dyed and boarded, I could see, under a good light, these places, and in my opinion and according to my experience, *a lot of sleaziness results from de-gumming and dyeing.*"

With this opinion that I have put in italics, I do not agree.

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

To me it seems absurd to blame the dyehouse for sleaziness, when there are so many other sources from which sleaziness may be due. Frankly, I do not believe that sleazy silk in hosiery can ever be eliminated, especially from the finer chiffon numbers of four-thread, three-thread, 48- and 51-gauge. Of course if every process in the manufacture of silk could be carried out under identical and ideal conditions at all times, sleaziness could be almost eliminated, but there are so many variables to be taken into consideration that I am afraid this can never be done. Every step in the process, from the cultivating and feeding of the silk worm, the reeling off of the cocoons, the soaking of the skeins in the throwing plants, reeling and winding on bobbins and cones, the knitting, dyeing, boarding, must be taken into consideration. It is just as logical to blame sleaziness on the boarding as it is to say it was done in the dyehouse.

This contributor also says that he has never seen sleaziness in the grey after knitting. That is perfectly logical, because the gum and oils on the silk have a tendency to hold the distorted stitches in place, preventing sleaziness from being apparent until after dyeing. I have seen hundreds of stockings in the grey, of exactly the same length, there being no trace of sleaziness, but when these stockings were de-gummed, one half of them were from one to three inches longer than the others, the longer stockings being very sleazy. These stockings were all de-gummed exactly alike, so the de-gumming surely wasn't causing this.

I do not say that loose tension caused this in the knitting, for I do not believe that sleaziness is caused either in the knitting or de-gumming and dyeing, if properly controlled. If we must pin down and place the blame for the greatest source of sleaziness, I would say that it is principally caused in the throwing plants,

by the silk throwsters. Most throwsters soak their silk skeins in soap or oil solutions for ten to twelve hours. Then they extract them for 30 minutes, and should their time of extraction be varied five or ten minutes on different lots, the silk becomes drier in winding in some places than in others, which causes uneven tension on the silk in knitting and shows up in wavy places, after dyeing. As previously stated, before dyeing the loops are held in natural alignment by the gum on the silk. Now this is not caused in the knitting, but is caused in the throwing plant. The knitter gets the silk improperly conditioned, and this silk on cones results in hard and dry places in the silk, which causes distorted stitches, no matter how tight may be the tension on the knitting machine.

Every full-fashioned mill should have its own conditioning room, to properly condition the silk after it is removed from the cases and before knitting. This is essential, because theoretically the silk dries out to some extent while in transit, thus necessitating its being re-conditioned in a damp moist room for several hours before this yarn can be used for knitting. It is necessary that a thorough check be kept on this conditioning room, as to proper degree of humidity, because if the room becomes deficient in moisture, it would be best that no silk be placed in there, for it will dry out, and then we get bad work and blame it on the dyer, when the cause is the improperly controlled conditioning room. Having been in several such rooms recently, it is a shame to see how careless some manufacturers are. One particular that I remember was, it was a sultry, hot day, and yet at one place, the room was full of silk to be moistened, yet it was only drying out. Now, lots of bad work could be eliminated right in the mill's own conditioning room.

I have never been able to see why sleaziness was blamed on the dyer. It might be that because they blame all other defects on the dyer, that when sleaziness came into being it came quite natural just to say, "Why, that was caused in the dyehouse." There is no dyer, never has been, never will be, who can eliminate sleaziness once it has been knit into the stocking. Of course the dyer can prevent further sleaziness, but to eliminate sleazy silk in the dyeing, once it is in the stocking, is impossible.

In summary, I believe that sleaziness is caused by irregularity of the silk, thick and thin places due to improper grading, improper soaking in the spinning mill, using oils that do not penetrate, or too short a time in the emulsion, parts of the skein being softened more than others, and when knitted certain parts will be drawn about the needles in a perfect loop, while others will be distorted; using too much soaking oil, which increases the diameter of the silk, causing sleaziness not to be noticeable until after the boil-off; uneven twist; improper winding, as hard cones will not feed off as evenly to the knitting machines; improper humidity in the knitting mills; using too fine a thread for the gauge of the machine; knitting insufficient courses per inch. All these, and many more, produce sleaziness, so it is up to the manufacturer to look in all directions before laying the blame specifically for sleaziness.

CONTRIBUTOR NO. 4735.

Bleaching Infant's Wool Hose.

How to get a soft and fluffy feel on these goods is discussed in answer to the April question.

EDITOR COTTON:

This is written in reply to the question of "CONTRIBUTOR NO. 4711," who asked in the April issue as to the best methods of bleaching infant's all-wool hose in order to secure a soft and fluffy feel. This man gave an outline of his materials and methods, and for the sake of reference, I am going to quote them as follows:

"For the rib top, we use two ends of 1/50 worsted. For the foot, heel and toe, two ends of 1/40 worsted, and for the tip, two ends of 70s/2 combed peeler mercerized bleached.

"Our hose are scoured for 45 minutes at 130 to 140 degrees F., in a 3 per cent olive soap bath, in a 100 gallon Monel metal paddle machine. They are then given two warm rinses and are ready to put in the bleach bath, which is an 80 gallon open Monel metal vat.

"The bleach is made up of one gallon of hydrogen peroxide, 100 gallons of water, and enough silicate of soda to throw it on the slightly alkaline side, also about one per cent olive soap in the bleach bath.

"The goods are entered at 120 degrees for between 1 and 1½ hours, holding the bath at the same temperature, the goods being stirred for the first 20 or 30 minutes. The vat has a lead coil and false bottom.

"The goods are then given a 2 per cent olive soap rinse for 15 to 20 minutes at about 120 degrees, then washed in warm water, after which they are softened with 5 per cent softener. The goods are then extracted and boarded on a boarding machine."

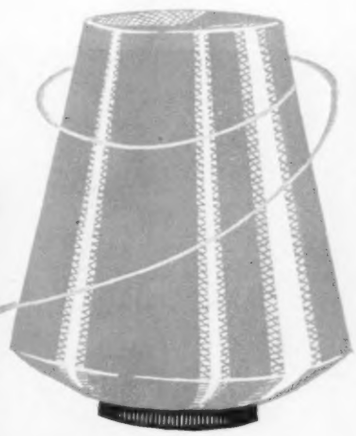
In the first place, in answering, I would suggest that he may use unbleached mercerized cotton on his tips and heels, as the bleaching bath for the wool will also bleach the cotton, much better, in fact. Second, an addition of ammonia to the soap and a lower temperature will scour the wool much better and leave it in a fluffier condition. As to the olive soap, for wool, I prefer to use a soap which is not too much alkaline.

In the third place, with regard to his bleaching, I do not believe he gives it enough time or enough heat. If he desires a short bleach, he must heat the bath to a higher temperature, 150 to 160 degrees F., and let the goods stay in the bleach no less than three hours. But the best bleach is obtained at a temperature of 115 to 120 degrees F., leaving the goods in the bath 10 to 12 hours or all night with the steam shut off. Finally, the goods must be washed in warm water first, then soaped and finished with some softener. He said that he is using 5 per cent of softener, while I believe that 2 per cent of a good softener should be enough. The finish I use is a regular finishing oil which has an ammonia base and which is very good for wool. In connection with the silicate of soda, I can only urge that this material should be the best available for bleaching purposes.

FARBER.

EDITOR COTTON:

This replies to your inquirer who wanted to secure suggestions as to the best method of bleaching infant's



1930

GROWTH

There are definite advantages in buying from America's fastest growing producer of mercerized yarn. With us, growth is always in the direction of better product and service. Five completely-stocked branch warehouses enable us to ship orders promptly and accurately.

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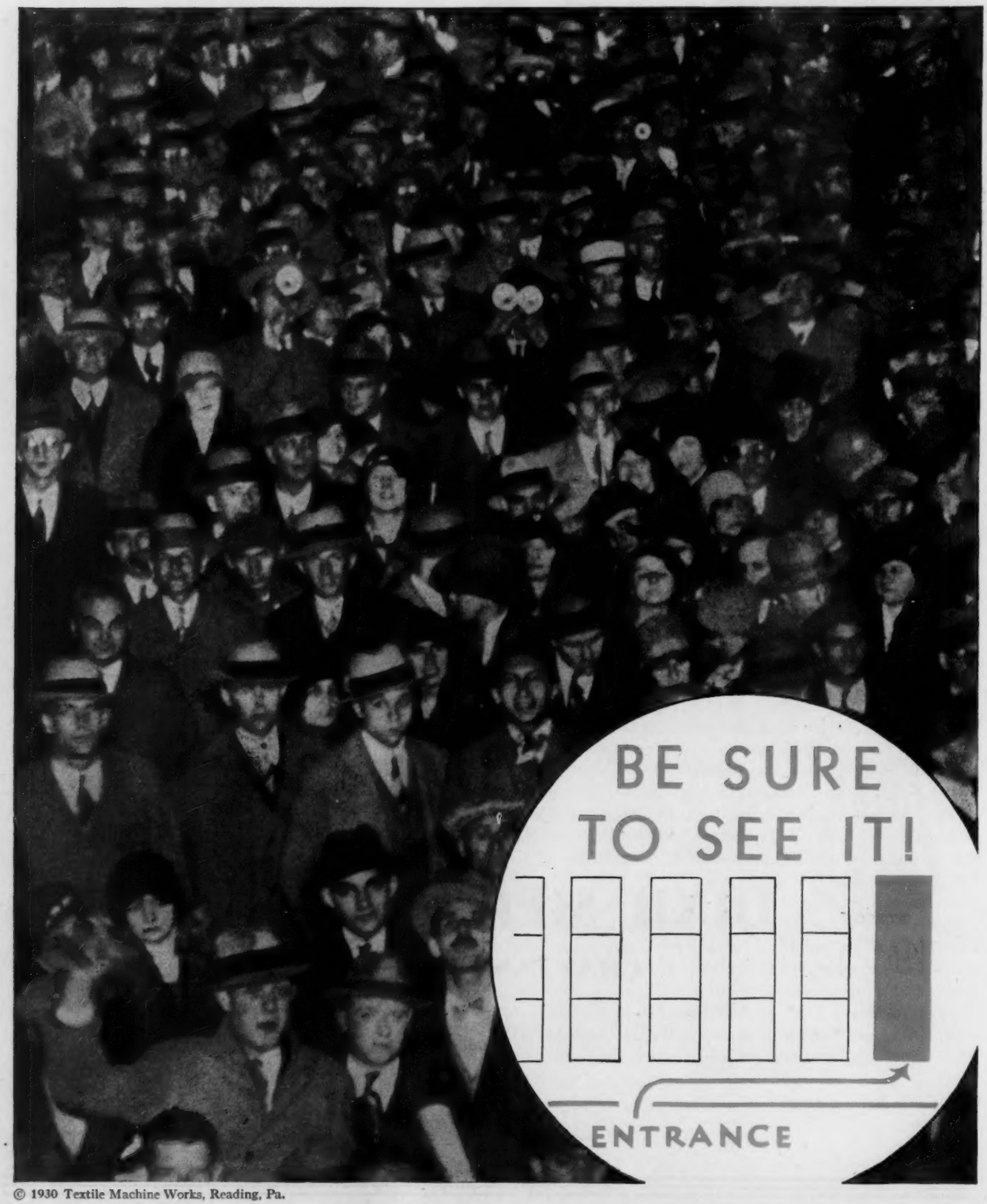
PHILADELPHIA MAY 12-16



© 1930 Textile Machine Works, Reading, Pa.

pure wool hose so that the finished fabric will have a soft and fluffy feel.

To render as much assistance in this connection as possible, we offer the following formula as one in practical use in the bleaching of wool hose. We wish to add first, however, that wool is a product in which time is a deciding factor, when it comes to bleaching it, as the bath cannot be forced too quickly by heat if proper results are to be expected.

First, the wool must be scoured and thoroughly cleaned, then extracted before being placed in the bleach bath.

Scouring can be done with soaps or especially prepared scouring oils or compounds, sold under brand names by chemical companies. The scouring bath should not be over 150 degrees F., and normally takes 45 minutes in 150 degrees F., with the proper amount of scouring agents used.

The following bath should then be made up:

Based on 100 pounds of wool hose—150 to 200 gallons of water. 10 pounds of liquid hydrogen peroxide; 4 pounds of silicate of soda. (Water conditions often make it necessary to add more or less silicate. However, just enough silicate should be used to make the bath alkaline.) Litmus paper can be used to make these tests.

Start the bath cold and slowly raise to 130 degrees F., and maintain this heat for 1½ hours. High grade buffers against alkalinity are often splendid aids in bleaching; however, they are not absolutely necessary.

After bleaching, it is advisable to wash wool goods in a softener bath of soap and sulphonated oil, or some branded softener, using 5 pounds of softener at 110 degrees F., for 15 minutes. This has a tendency to add a fluffy feel to the goods. The less silicate or alkali necessary to use, the softer the wool will finish.

M. K. (TENN.)

What Causes Magnetized Needles?

If you have run into this trouble on these machines, write to "Knitting Kinks" and tell your remedies.

EDITOR COTTON:

We are having trouble with latches sticking to the back side of guides on our Scott & Williams plain knitting machines. On examination of the needles I find them to be magnetized, especially at the latch. These latches are drawn up to and tend to stick to the guides because of this magnetic attraction. The guides become worn and roughened by the wearing; also I attribute a considerable portion of our needle breakage to this rubbing between the latches and guides. I believe the magnetism is induced by heating due to friction of parts. Not all of the needles are magnetized, and those which are magnetized do not carry the same charge.

I would like to have the ideas of some of your readers as to what causes this magnetized condition in the needles, and what, if anything, can be done to prevent it.

CONTRIBUTOR NO. 4741.

TO THOSE WHO THINK THAT ALL FELTS ARE ALIKE

If there is a full fashion knitter who thinks that "felt is felt" regardless of make, he should consult an Aetna Felt user. He would learn from him that Aetna brand is different —that it imparts sufficient moisture to the silk or rayon yarn with as little tension as possible. This eliminates excessive wear on the thin steel tubes in the yarn carriers. He would also learn that the uniformity, and adequacy of moistening with Aetna Felts means a continuously even stitch.

Give the sinkers and dividers on your machines a chance to do their work properly. Specify Aetna Felts.

THE AETNA LINE INCLUDES
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Special Cloths of all kinds to your specifications.

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Aetna FELTS

Getting a Straight Seam Without a Mark.

A description of the kind of sinkers to use to secure the desired result without a mark.

EDITOR COTTON:

I have read with much interest the question from one of your readers in "KNITTING KINKS" asking how to get a straight seam on a seamless knitting machine without using a marker. If someone would tell me how to do this I would be a thousand times obliged to him.

Your inquirer does not state what make of machine he is having this trouble on, making it difficult to furnish exact information. I will take it for granted, however, that he is referring to the Scott and Williams type of machine. Your inquirer states that he dislikes to use the marker because it makes a line through the foot and toe of the stocking.

I have been using marking sinkers on Model K machines for several years without the trouble indicated by your inquirer. I do not believe that he is using the right method of making these marking lines, and as there are several methods of doing this on a Model K, I will go into detail describing each method, with the hope that one of these may be of help to him and other readers.

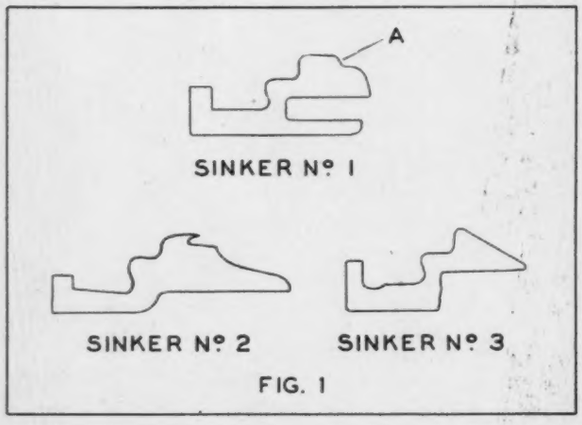


FIG. 1

To my knowledge there are three different types of sinkers used for making marking lines on the Model K. I have shown these in the accompanying sketch, Fig. 1. Sinker No. 1 is the regular Scott and Williams Model K marking sinker, except the throat of the sinker has not been cut out at *A*, thereby causing it to make a continuous mark all the way through the hose. Sinker 2 is used with the drop stitch attachment, and Sinker 3 is used without the long butt sinkers and is controlled by the slackening cam.

In order to prevent the marking line from showing through the sole, heel and toe, it is necessary to bring these marking sinkers out of action in the heel, sole and toe, so they will not push the stitch over any more than the regular sinkers in the machine. This is possible to do with Sinker No. 2 and Sinker No. 3, but it is not possible with Sinker No. 1.

Sinker No. 1 is commonly used by most mills for making these marking lines, but the trouble with this sinker is that it makes the undesired lines through the heel, sole and toe as your inquirer states. This is so, because of the fullness of the throat of the sinkers, which causes them to make the same marking line through the sole as in the leg of the hose. This sinker is probably the one the inquirer is using at present.

Sinker No. 2 and Sinker No. 3 are the ones I am using for this purpose at present. With these two different types of sinkers it is possible to bring them out of action while making the hem, heel, sole and toe. They only go in action at the start of the leg, and go out of action changing into the heel. They stay out of action then until the next leg is started.

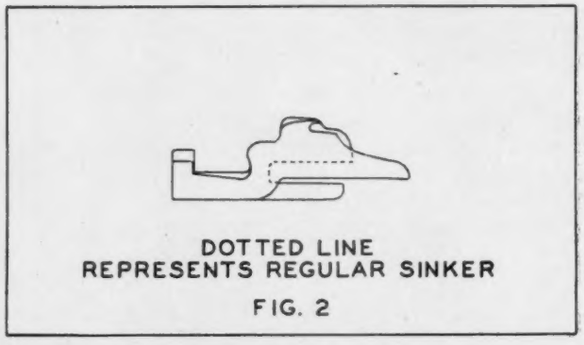


FIG. 2

I wish to state here that both of these sinkers have their advantages by not making the undesired lines, but also have their disadvantages as I will state, so that the inquirer will know what he must do to use them.

Sinker No. 2, shown in Fig. 2, is used in connection with the Scott and Williams drop stitch attachment. The throat of this sinker is the same as the regular sinker, the difference being that it is longer, as is shown in the illustration.

In order to insert this sinker in the inside sinker ring, it is necessary to slot the groove of the inside sinker ring where the marking sinker is to be inserted, so that the top and throat of this sinker are in perfect line with the rest of the sinkers. When this has been done this sinker will knit the same as the regular sinker without making any mark of any kind when the drop stitch attachment is out of action.

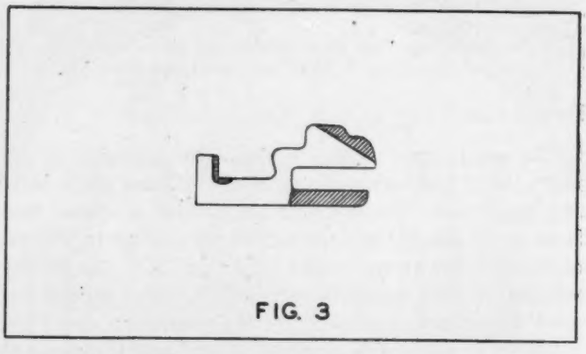


FIG. 3

This drop stitch attachment consists of a vertical arm which is inserted inside the cylinder. It is movable up and down, being held in place by a shoulder screw attached to the cylinder raising tube. The top of this arm rests just below the bottom level of the sinker at the point where the stitch is being formed. As this arm is movable up and down, this up-and-down movement controlled by a bracket attached to the stitch regulating lever shaft, which in turn is con-

trolled by ¼-inch drum stock on the drum.

At the start of the leg, the arm is automatically raised, due to a spring tension on the arm. Due to the extra length of this marking sinker, this sinker rides over the top of this arm, which has raised just enough to raise this marking sinker which is at this time directly over the knitting point. By this action of course, a mark is made. An adjustable eccentric regulates the height of this arm, and the marking line can be made as desired. This arm stays in this position until the change into the heel is made, which pulls this arm downward, thereby not raising the marking sinker, resulting of course in no further line being made. The cams on the drum hold it out of action for the rest of the hose.

Sinker No. 3, although not as satisfactory as Sinker No. 2, can be used, the disadvantage being that the sole of the hose cannot be slackened.

To make this sinker, cut out a regular sinker as shown by the shaded portions in Fig. 3. In cutting the top part of a regular sinker, do so in such a way that when inserted in the ring, the throat of the regular sinkers will be even with this part of the marking sinker.

All of the long butt needles are taken out of the outside sinker ring and short butts put in their place. This No. 3 Sinker of course has a long butt, and will be the only sinker in the ring that has. The machine is drummed up so that the slackening cam is in action when starting on the leg and goes out of action when starting on the heel, remaining so until the next leg is started. It can be seen that the slackening cam pushes in on this marking sinker when it is in action, but when out of action regular knitting is resumed.

CONTRIBUTOR No. 4685.

A Kink for Circular Machines.

Information of this kind is always interesting to those in charge of machines, and further kinks will be welcomed.

EDITOR COTTON:

I have been reading the "KNITTING KINKS" department of your magazine for the past several years, and I have received some good ideas from the various letters published in it. Now I have a little idea of my own which I should like to submit for the consideration of those who may not know of it.

It applies to the Scott & Williams types of machines which use the ratchet pawl lifter plate. My experience has been that there is usually considerable difficulty with the ratchet pawl lifter plate screw (15278) getting loose in the plate (8012), causing the machine to run out of time, or to get an extra kick or to lose a kick.

My idea is to substitute the slide actuating lever adjusting screw (6797), for the ratchet pawl lifter plate screw (15278) for holding the ratchet pawl lifter plate (8012) to the ratchet pawl lifter (6027).

In Fig. 1, I am showing a sketch of the parts involved and the numbers are the ones used in the manufacturers' catalogue to identify the various parts.

The reason for making this change is to give ample room for applying the lock nut. In using the slide

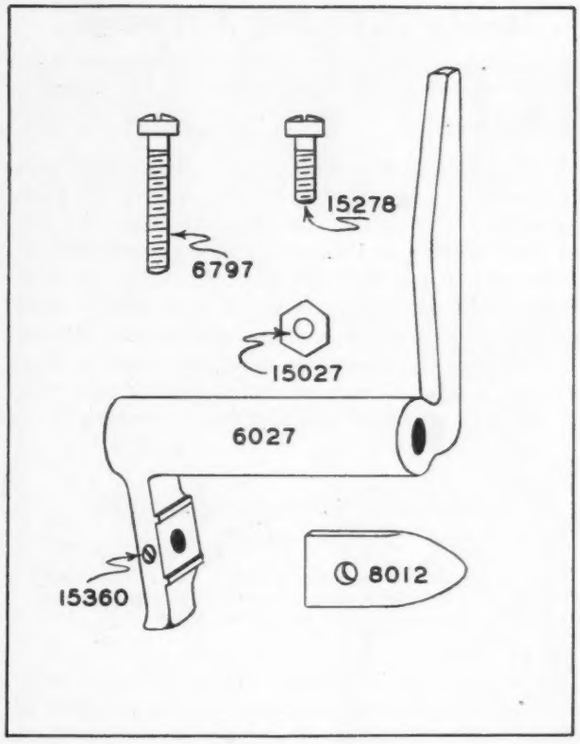


Fig. 1.

actuating lever adjusting screw here, I find it satisfactory to use the slide actuating lever adjusting nut (15027) as a lock nut. The lock nut should be jammed up against the ratchet pawl lifter plate (8012); then it will not slip so easily.

I would be glad to have any of your readers try this, and let us know through "KNITTING KINKS" how their experience with it works out.

CONTRIBUTOR No. 4734.

What Causes Stiff and Starchy Silk?

If you can offer some suggestions that will help, either at the mill or at the throwster's plant, send them in. While this question refers to full-fashioned, any circular knitters are invited also to tell their opinions on this point.

EDITOR COTTON:

I would like to see some discussion in the "KNITTING KINKS" section as to the causes and remedies of stiff and starchy silk for full-fashioned stockings. I might state that one of our customers has complained that the silk yarn with which we supply him is entirely too stiff and starchy. He is a knitter of full-fashioned stockings.

For the benefit of those answering this question, I might say that there is nothing either on the needles or on the carriers on the machine in the way of a deposit. In the processing of the yarns, only pure olive oil and olive oil soap is used. The knitters, in using this yarn, run it over a solution of softened water.

I should appreciate any advice from your readers as to how the knitter may relieve this condition, and also as to how it may be eliminated at the throwster's mill.

CONTRIBUTOR No. 4728.

Loading Up On First Narrowing.

A practical question on full-fashioned machines which readers with experience are invited to answer.

EDITOR COTTON:

We are having difficulty on our full-fashioned machines with loading up in the first narrowing. We have tried several things, such as adjusting the knocking-over, and needles, and have raised the narrowing up and lowered it, etc., and still have this difficulty. We should appreciate having some of your readers look over the accompanying sample showing this trouble, and offering any suggestions as to its remedy. Also, we would be glad to have any other readers who have had this problem to tell how they have overcome it.

D. C. (N. C.)

A System for Reducing Needle Consumption.

This is a big item in every knitting mill. This man tells his system of keeping a record of needles, and of keeping the consumption down.

EDITOR COTTON:

In answer to the question, "What is Your Needle Breakage, and How Do You Keep it Down?" asked by "CONTRIBUTOR NO. 4618" in a recent issue of COTTON, I will use a copy of one of the pages of our stock book, shown in Fig. 1, to illustrate the method we use.

As will be seen by referring to the illustration, at the end of every month we total up how many needles each fixer has taken out of stock; what they cost; and how their average consumption compares with the production of their section. We have this report typed and put it on the bulletin board in the knitting room.

We find that this system creates quite a bit of rivalry between the different sections. Each section strives to have the best record, and it is surprising to see how the used needles that heretofore were always lying around the work bench would get sorted out and the good ones used again. Hence, instead of allowing them to lie around and rust to be thrown finally into the garbage can, by using the needles again a great saving was soon realized.

Another good feature of the system is that we seldom run out of stock. As soon as we are down to two boxes of needles, or two machine parts of one kind, our stock clerk copies the address of the company we order from off the top of the stock sheet and sends in the order. This saves the time of looking through the catalogs every time we want to order something. We use index markers for the stock book.

CONTRIBUTOR NO. 4681.

Is Backwinding Necessary; Is Dry Package Knitting Practical?

Your own experiences and ideas on this pertinent question will be welcomed. What do you think?

EDITOR COTTON:

For some time we have been reading the various discussions on full-fashioned manufacturing in COTTON, and would like to submit a question for discussion by C. H. Baxter and others.

In our full-fashioned knitting room we have no humidifying system. We store our silk in an adjoining room, in which we have a number of humidifiers which blow the water spray over the silk.

We are at present backwinding all of our silk, consisting of four, five, six and seven-thread, using a bleach glycerine softener, the mixture being one quart of softener to ten gallons of water.

For some time now we have been contemplating the installation of a conditioning room. Our interest in this was quickened recently by a statement that many mills, after installing a conditioning room, are eliminating the backwinding process. If, by the installation of a conditioning room, we can do this, we could pay for the room in two months, by the saving in backwinding cost, as we estimate that it costs from .03½ to .04 cents a dozen for backwinding.

I would very much like to have the opinion of your readers as to the advisability of abandoning backwinding where the silk is conditioned in a modern, properly installed conditioning room.

CONTRIBUTOR NO. 4724.

#90 54 ga S.B. TORRINGTON PRICE $45.00 M

ON ORDER		RECEIVED		STOCK	REQUISITIONED			
DATE	AMT.	DATE	AMT.	BALANCE	DATE	AMT.	BY	STOCK CLERK
		SEPT 25/29	1750	1750	Oct 14	250	B. Smith	
				1500	" 20	250	T. Jones	
				1250				

FIG. 1

Checking Time and Product.

EDITOR COTTON:

If you think the men in the full-fashioned knitting game, including those in the South who are just getting into that field, would be interested, you can publish the forms which we use in our full-fashioned department for keeping a check on the production and for keeping the time of the various operatives, together with a full description of the way in which they are used.

The time check, shown in Fig. 1, is hung on the end of the knitting machine. You will note that the name of the operator, the date, the rate and the opera-

TIME CHECK
FULL FASHIONED DEPT.

Name _____

Week ending _____

	10	20	30	40	50
MON					
TUES					
WED					
THUR					
FRI					
SAT					

	1	2	3	4	5	6	7	8	9	10
MON										
TUES										
WED										
THUR										
FRI										
SAT										

Total Doz. _____

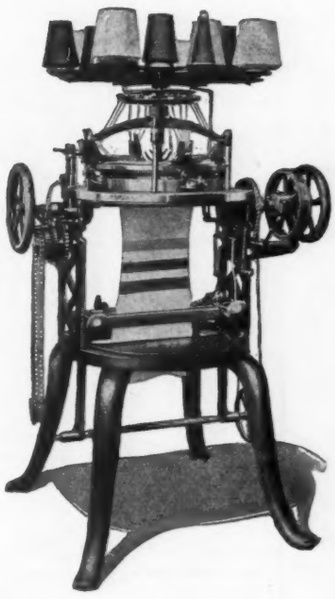
Rate _____

Operation _____

Operator No. _____

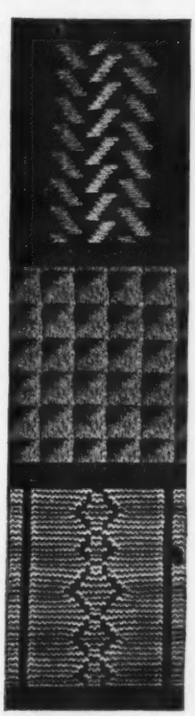
FIG. 1

BRINTON CIRCULAR KNITTING MACHINES



Rib and Sinker Top Machines for Plain and Fancy effects.

OUTERWEAR MANUFACTURERS



assure the success of your merchandise by making them on Brinton's. They will perform up to your expectations if Brinton's knit them.

Brinton Knitting Machines are the biggest backing that you can give your sales force — the biggest help to your jobbers and retailers — the biggest value to the ultimate consumer.

Let us send you full information of our line

H. BRINTON COMPANY
3700 Kensington Avenue
Philadelphia, Pa.

INSPECTORS REPORT

Date 9-28 Lot No. 38

Style 427 Size 10

Doz 7

Knitter 7

1st. Doz. 6 Pairs 7½

Looper holes Doz. ____ Pairs ____

Footer holes Doz. ____ Pairs 1½

Legger holes Doz. ____ Pairs 2

Bad Seams Doz ____ Pairs 2

Total Doz. ____ Pairs ____

Inspector 7

Remarks ____

FIG 2

FULL FASHIONED KNITTERS REPORT

Date ____ 192____

Legger No.	
Knitter No.	
Doz. Knit	
Needles used	

Remarks:

Signed

FIG 3

tion, whether legging or footing, is filled in. The knitter places the finished work on the rack on his table, and the time keeper comes around at the end of the shift, checks over the work against the report filled out by the knitter, which is shown in Fig. 2, and which I will next explain, and then punches the knitter's production in the card, Fig. 1. The top portion of the card is for 10s of dozens, while the lower portion of the card is for single dozens. It is evident of course that the single dozen section is used more on the legger, while the upper portion is more applicable for the larger production on the footer, although in the case of an uneven number of dozens both portions of the card are punched.

As he finishes each batch of work, the knitter fills out the form shown in Fig. 2, showing the amount of stockings knit as well as the number of needles used. This is the form which the time keeper verifies in counting the work on the knitters' table. These forms are turned in to the superintendent who compiles the production from day to day, as well as the needle consumption from them, so that the making up of the time is comparatively simple.

The third form we use is the one shown in Fig. 3, which comes back to the superintendent from the gray inspectors and shows the number of dozens of firsts as well as the number of stockings containing looper holes, footer holes, legger holes, etc. This gives the superintendent a check upon what is being done and the information thereon affords him an opportunity to check up on any particular operation.

I would be very much interested in seeing in the "Knitting Kinks" department, any forms or other information pertaining to any phase of keeping records, etc., in full-fashioned and seamless hosiery mills.

E. C. (N. C.)

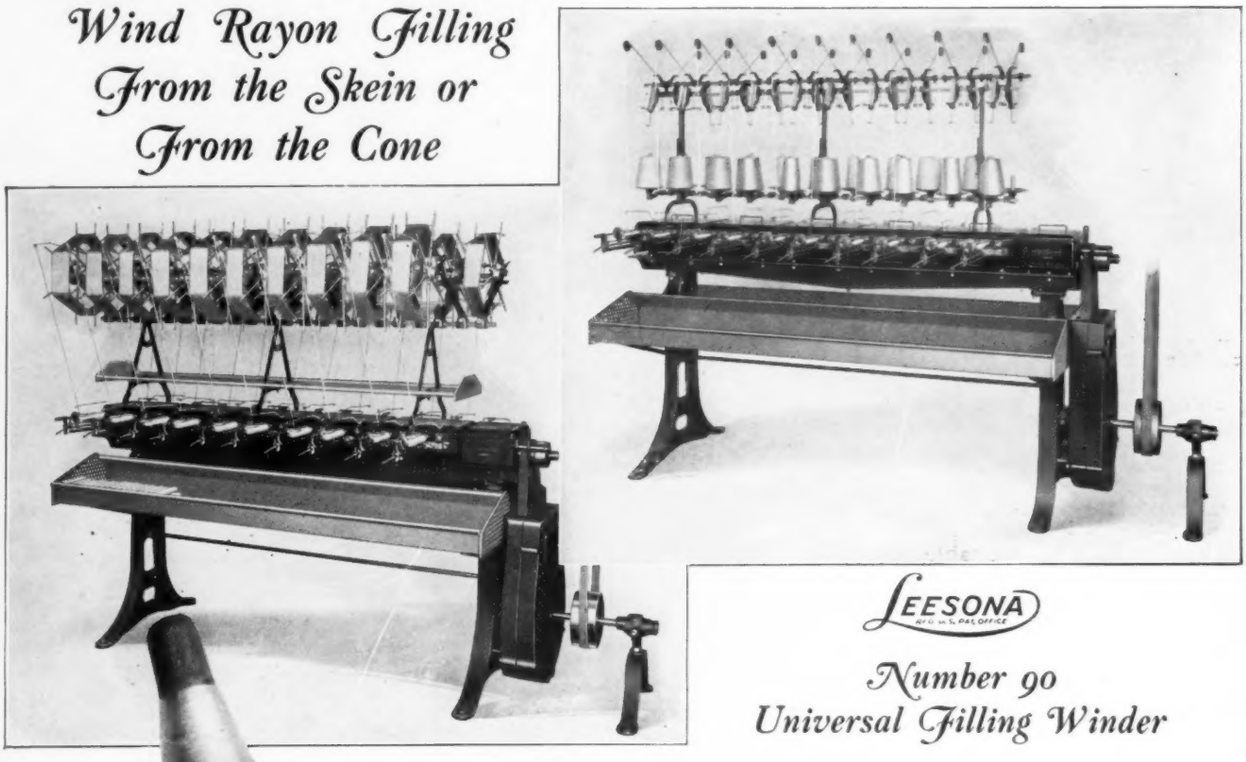
Standard Length for Sheets.

A single standard of 108-inch torn length for sheets was unanimously recommended recently to the Division of Simplified Practice of the Department of Comemrce by the standing committee on simplification of hospital and institutional cotton textiles. The committee further recommended the adoption of hems two inches in depth for the top and bottom of such standard length sheets.

These recommendations were based on answers received from more than 2,000 inquiries sent to members of the American Hospital Association, Associates for Government Service, The General Federation of Women's Clubs and the Y.M.C.A.'s of the country. Ninety per cent of the replies favored the 108-inch length from the standpoint of increased comfort, sanitation and service. Eighty per cent favored even hems at the top and bottom. While two inches was the depth most frequently mentioned, depths up to five inches were suggested. The action was one of the developments in the simplification project promulgated in June, 1927, through the unanimous vote of the general conference of representatives of manufacturers, distributors and consumers, held at the Department of Commerce in Washington.

YOUR CHOICE OF METHODS

Wind Rayon Filling From the Skein or From the Cone



LEESONA

Number 90 Universal Filling Winder

WHETHER you buy rayon filling in the skein or on cones is immaterial; the No. 90 Universal Filling Winder is adapted to either supply, and transfers yarn efficiently to compact cops or bobbins, providing the longest filling that can be contained within the shuttle.

Equipped with the skein attachment, yarn is wound from skein to bobbin or cop in a single process, intermediate winding to spools or other container being thereby eliminated. Bobbins or cops wound by this method are uniform in size and tension, and deliver freely and smoothly without sloughing off.

The convenient location of the cone supply and its great length make operation extremely easy and economical, while the length of yarn travel and the method of tensioning insure the same high grade filling that is characteristic of Universal Winders.

UNIVERSAL WINDING COMPANY
BOSTON

304

UNIVERSAL WINDERS

Mille Fleurs . . . in French . . . by National . . . scattering flowers in black and Homard on Cameo Blush ground.

It is easier to sell the buyer what he knows. He would rather buy than be sold.

And *processed by National* means right style . . . unfailing quality . . . the dependable excellence of long experience and master skill.

National has earned your buyer's confidence.

Carrément . . . a National design for two of the new summer colors . . . pattern of squares in Silverwing Grey, the new Caress Blue and Charm Pink in a drop diagonal on white ground.

Bohkara . . . in subtle Homard, India Red and Peasant Blue on natural linen . . . the design, of course . . . by National.

The Scope of National Service

Piece Dyeing—Weighting—Finishing—Moire—Hosiery—Roller and Screen Printing—Rayon and Celanese—Ribbons—Skein Silk—Knitted Fabrics—Mixed Goods.

NATIONAL SILK DYEING COMPANY

Main Office: 5 Colt Street, Paterson, N. J.

New York Salesrooms: 152 Madison Avenue.

Works: Paterson, N. J., East Paterson, N. J., Allentown, Penn., Williamsport, Penn.

Canadian Branch: Dominion Silk Dyeing and Finishing Company, Limited, Drummondville, P. Q., Canada.

Reg. Trade Mark

NS DC

NATIONAL

The KNIT GOODS MARKETS

Southern Manufacturers Pioneers in New Popular Silk Crepe Hose

RECENT INNOVATIONS in women's full-fashioned stockings are viewed by some interests as indicating that style and construction are working back toward first principles. Buyers for retail stores, complaining the hosiery markets were dull and uninteresting and that sales were slack because there was "nothing new" to place before shoppers, laid the blame to self contented manufacturers for not presenting something in the way of novelties, maintaining women had been fed up with staple silk numbers, with little more than the French heel to take them out of the ordinary in construction. Even that and the picot top had gone well beyond the innovation stage.

Now these same buyers—some of them at any rate—are holding their commitments down to needs for a week at the utmost, asserting there have been so many style changes that shoppers are confused and the stores feel they cannot with safety stock up with any one new creation, lest it become a back number before the cream could be skimmed off the first showings.

BEFORE THE MARKETS for women's spring hosiery were receiving even passing attention, crepe stockings of tram silk minus silk luster were being exploited and receiving more adverse than favorable comment. Since then lusterless silks have become the pride of a number of manufacturers of full-fashioned numbers. The Westcott Hosiery Mills of Dalton, Georgia, is credited by hosiery trade news writers with being the first to present what now is referred to generically as crepe hosiery but exploited by various manufacturers as "Crepe-tex," "Dultex," "Dul Patina," "Lack-Luster," "Dul Sheer," "Crepe chiffons," etc., etc., plus. The Westcott "Fabrimode," announced as sponsored by Schiaparelli, appears as the Adam and Eve for a large family of crepe hosiery terms.

By an unusual coincidence another Georgia manufacturer was among the first to offer the Guildmode line of silk stockings. The Archer Hosiery Mills, in Columbus, whose president, A. Straus, Jr., was active in organizing the Guildmode group of manufacturers, was receiving much notoriety in northern markets for its showing of the new spiral knit construction while yet numbers of mills still were experimenting. When

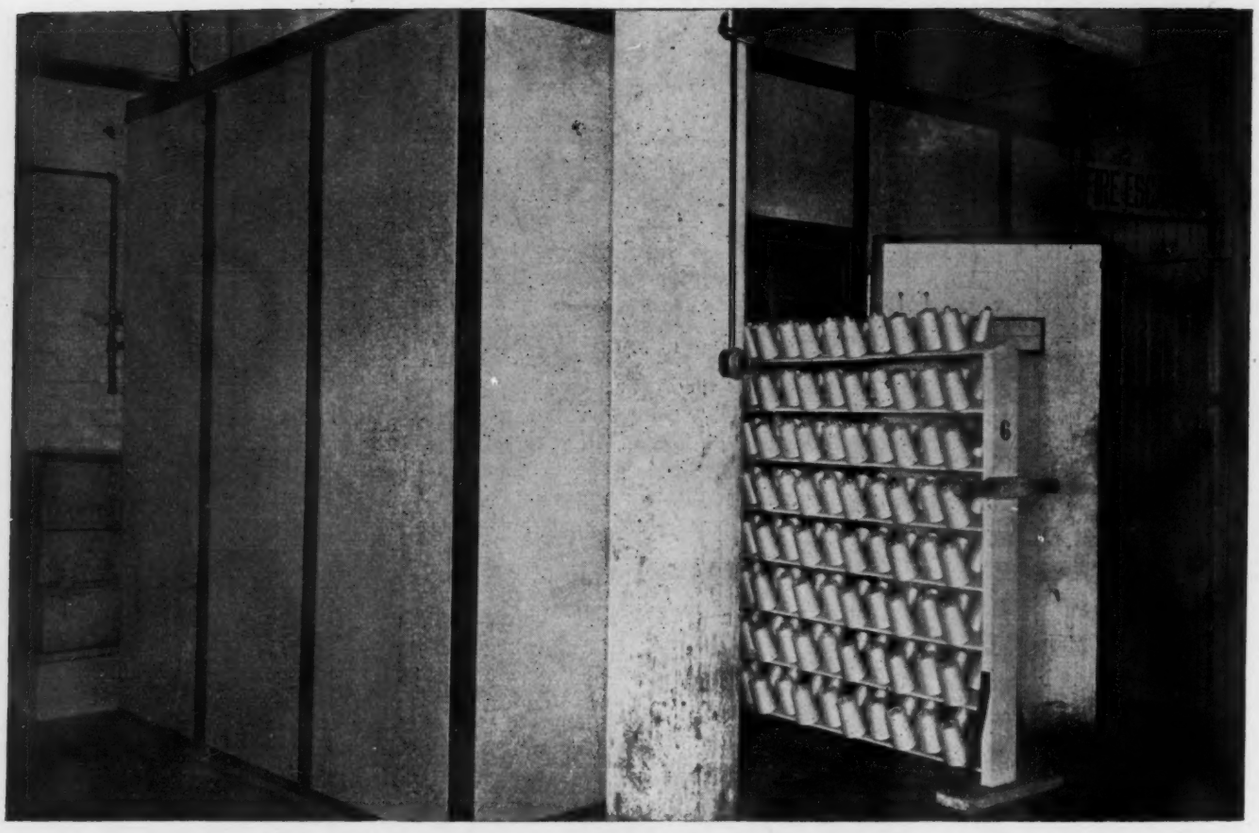
A New Design of Full-Fashioned Machine

SOME OF THE MANUFACTURERS of full-fashioned hosiery have had unofficial intimations of a new type of machine attachments to be ready for delivery some time soon by the Textile Machine Works, Reading. The company admits that, in line with its policy, it expects to continue adapting its machines to "style trend." This casual admission is construed as meaning the new machines are to be on the order of devices for facilitating the knitting of novelty hosiery and simplification of methods for effecting changes.

Staple numbers of full-fashioned hosiery have had a long run, it is pointed out by manufacturers, and most departures from well established types of construction have been worked out by buyers rather than by machine designers. A long stride in improvement of circular knit construction has been made in the introduction of very fine gauge spiral knit, and this is thought by some to have supplied an inspiration for radical changes in full-fashioned equipment.

While the Textile Machine Works has declined to give the slightest intimation of the character of changes which may be made in its standard model machines, manufacturers installing new machines say something is being worked out to widen the gap between the modern and the obsolete, and some believe the Reading company's development may have that object in view. A large part of the excess production of hosiery, which is said to be the chief ailment of the industry, is said to come from machines which reached the stage of obsolescence some years ago, and which are producing most of the low end hosiery with which recognized high standards must compete. "If we could get rid of the older 39-gauge and the few remaining 36-gauge machines," said a Philadelphia manufacturer, "we would be coming out of the woods." He thought elimination of the 39-gauge antiques which have remained in commission a long time after their "natural life," would effect a 20 per cent decrease in production. Then, this manufacturer continued, "I would favor selling no machines to newcomers in the full-fashioned field unless they were able to buy for cash. In this way, I believe, there would be less danger from too much expansion. Anyhow, if there is to be expansion, those already in the business should be given first show to benefit from it. Credit is a fine thing, but it ought to be used advisedly, especially when it comes to selling such costly equipment as full-fashioned knitting machines. The way to get the machine companies' favor in relation to applying certain restrictions to machine sales is to scrap old equipment, instead of selling it to persons who will patch it up and become competitors of the mills they buy it from."

The Haines Hosiery Mills, Philadelphia, recently attracted some attention to its scrapping of a number of 39-gauge machines. There is a great deal of this gauge equipment in Philadelphia, where many of the older mills are located. Between 39-gauge hosiery that is made to masquerade as 42-gauge, and the deception practiced by many merchants in knowingly selling full-fashioned irregulars while refraining from telling the trade and shoppers of the fact they are not first quality, the full-fashioned markets are in a stew that might have been escaped. The Harron Hosiery Mills, Philadelphia, a few weeks ago reported a flagrant case of a jobber undertaking to exploit irregulars as first quality. Exhibiting the correspondence which passed as an aftermath of the transaction, the mill manager shows that the jobber insisted upon buying irregulars not so marked. Told that the company marked all of its irregulars plainly and sold them that way, the jobber agreed to take a small quantity—all that was available. What he failed to sell he returned for credit, stating his reason for making the return was the "irregular" marking. Then the Harron company reported the incident to the Better Business Bureau and disclosed the names of three well known mills whose unmarked irregulars had been bought by the same jobber.



See the Carrier Yarn Conditioning Room at the Knitting Arts Exhibition

EVERY textile man visiting the Exhibition should see the Carrier display of air conditioning equipment. Here you will find an exhibit of unusual importance . . . whether you are interested in equipment to improve the quality of your product . . . to increase production . . . or to better working conditions for your employees.

Of particular interest to knitters is the Metal Panel Yarn Conditioning Room, illustrated above, making possible ***direct knitting*** . . . conditioning silk and rayon ***right on the cone.*** This works to the elimination of costly backwinding . . . operating and labor costs drop . . . the whole knitting process is greatly improved . . . all contributing to the uniformity and quality of the hosiery.

Our engineers will be on hand and will be glad to explain in detail this new and effective conditioning process, and other new developments in air conditioning equipment.

If you are unable to attend the Exhibition, write for literature describing the Carrier System for Air Conditioning as applied to hosiery and textile mills, and ask for a visit from one of our engineers.

Carrier Engineering Corporation

Offices and Laboratories
NEWARK, NEW JERSEY

New York Philadelphia Boston Chicago Cleveland Detroit Washington Kansas City Dallas Los Angeles

in putting the Guildmode stocking on sale, John Wanamaker's Philadelphia store described it as "The better stocking, seamless, yet perfectly conforming," and explained in a newspaper advertisement: "Certain leading hosiery manufacturers organized a guild to produce only the best."

By the time it became a settled fact that the trade had taken hold of lusterless silk stockings as something promising of a long run, the inside out full-fashioned had made some headway as conforming to the low-luster or lack-luster idea, and for a while looked as if it had leaped right into popularity. Then came the feather fashioned, the feature of which is the concealed marks indicating the dropping of needles in the narrowing for the ankle, and several mills are paying tribute to the owner of the patent for the privilege of making and selling it. All of which harks back to early principles.

The darts which feather fashioned has removed often were referred to in full-fashioned circles as distinguishing marks, by which it was a simple matter to differentiate fashioned and seamless—until seamless manufacturers copied the marks in addition to seaming the back of the leg. This, it is pointed out in the trade, recognizes the plain leg of the original seamless as carrying an appeal, and is hailed by manufacturers of stockings of the Guildmode type of construction as an obeisance to the circular knit, and made the basis of a prediction that before the ides of June, a seamless knit inside out stocking will be nosing its way into public favor.

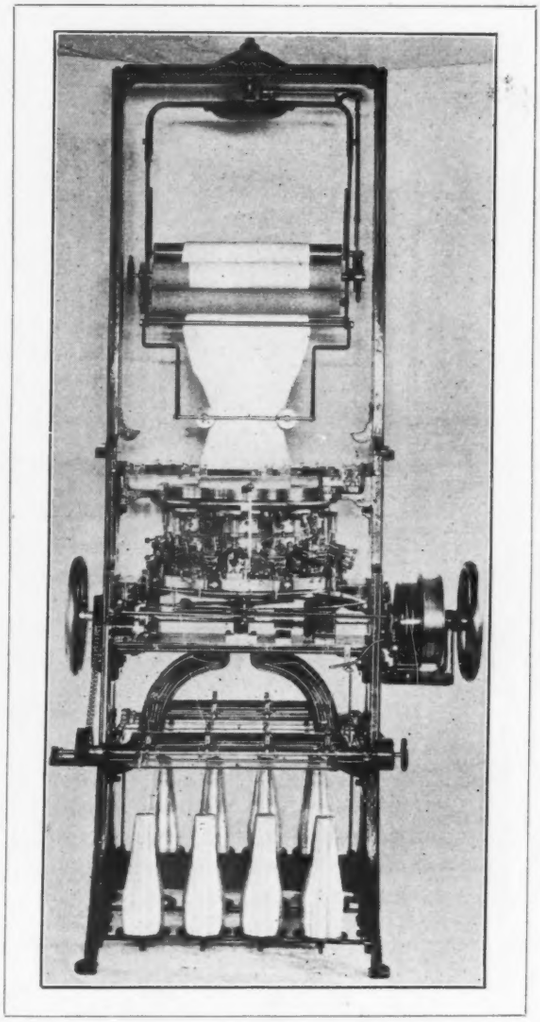
Thus far there has been evolved two distinct types of low luster silk stockings—the crepe and the inside out, which carries the memory of long-ago manufacturers and merchants back to the days of lisle stockings as antecedents of the present featured lusterless and seamless. And there are persons among buyers for retail stores who, complaining now of an excess number of styles, are asking, "why flatback dull silks, since the lisle of long ago was in line with what is sponsored by numbers of manufacturers as the 'final word in modern silk stockings?'" It is noted that Westminster, Ltd., anticipating a lisle vogue, is making much of its trademarked line "Lisle-Lure" as "the definite answer to the season's call for hosiery without sheen, shine or lustre."

This is suggestive of an opportunity for some bright, aggressive promoter of the use of more cotton to distinguish himself and make the American cotton belt a sharper rival of Japan in supplying the raw fiber for women's stockings.

Stores Forced Pre-Easter Sales with Silk Hosiery at Markdown Prices

THAT THE HOSIERY primary markets have had a long sinking spell, from which there has been only partial recovery, no manufacturer or merchant will deny. Never before in the 30 years and more of the full-fashioned industry has it been so forcibly demonstrated that production has been and still is well ahead of what the markets probably would absorb under the most prosperous conditions. For approximately five

Resiliency of Fabric!



Ribbed fabric made on the

COOPER SPRING NEEDLE RIB BODY MACHINE

is unequalled for
Underwear, Swimming Suits, Sweaters, etc.

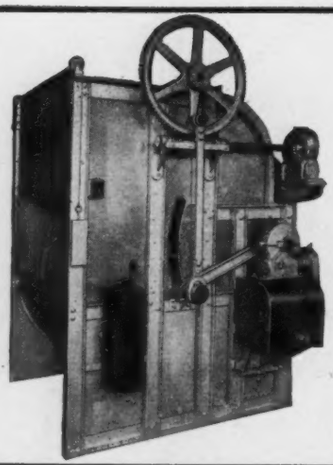
SEE THESE MACHINES AT THE PHILADELPHIA EXHIBITION—SPACES 389, 390, 415, 416.

CHARLES COOPER CO., Inc.
BENNINGTON, VERMONT
U. S. A.

Showing the Progress Being Made in the Designing and Construction of Machines for Finishing Textiles

... made by BUTTERWORTH

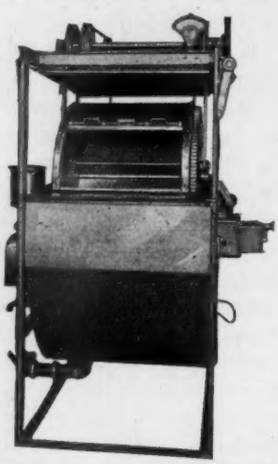
[Folders describing these machines completely will be mailed promptly upon your request]



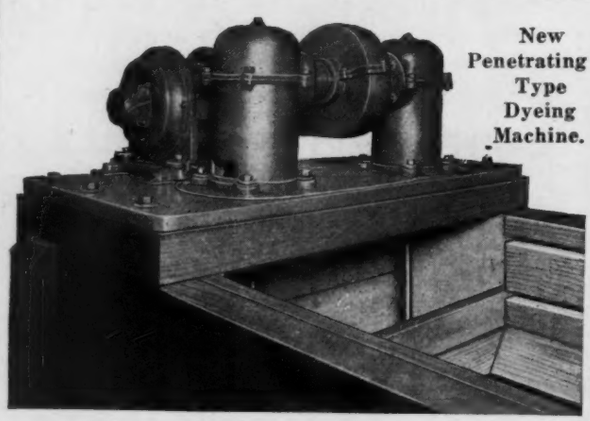
Butterworth Hoist Type Skein Machine, for silk, rayon and mercerized cotton.

THESE machines are made from a variety of materials, with construction features designed to meet the requirements and individual desires of our customers.

FOR smaller dyeings, especially of more delicate goods, and to help you with those colors which you are finding troublesome, and for re-dyeing of goods which have been subject to previous dyeing and stripping.



Hand Hoist Type Rotary Hosiery Dyeing Machine



New Penetrating Type Dyeing Machine.

THIS machine does its work evenly, quickly, and without undue attention to the yarn, all of which is windable after dyeing. Dyeing time is reduced; less steam is used; and greater flexibility is provided in regards to the size of the lots that may be dyed in a machine of given size.

H. W. BUTTERWORTH & SONS CO.
Established 1820
PHILADELPHIA, PENNA.
PLANTS at
PHILADELPHIA and BETHAYRES, PA.
New England Office:
TURKS HEAD BUILDING, Providence, R. I.
Southern Office:
JOHNSTON BUILDING, Charlotte, N. C.
In Canada:
W. J. WESTAWAY CO., Hamilton, Ontario

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING MACHINERY FOR THE TEXTILE INDUSTRY

months, mills have been shutting down on a part of their production. During that period many have been idle, at times, for a few weeks, many more operating steadily on reduced schedules and eight to ten mills idle an average of two months by reason of strikes. Yet to almost the dawn of Easter morn, silk stockings were available to price-cutting buyers at figures representing little or no profit to mills. Scores of manufacturers have said they do not recall a pre-Easter period in which the big stores as a class made their purchases so late and put in less stock, for one of the busiest two-weeks in the year.

While some important representative hosiery mill men attribute this merchant attitude to "too many styles", a fear that prices had not reached bottom and that an oversupplied market warranted the conclusion that nothing would be lost to buyers by waiting, probably was at the bottom of the dullness which registered six months ahead of schedule, the trade looking for at least two quiet summer months, as usual. "Too many colors," says one of the older and more successful Pennsylvania manufacturers, selling his branded lines to the retail trade direct. "We have more than 40 colors in our line," he continued, "but only ten of these are represented in 85 per cent of our sales." This mill executive said he had not yet added low luster or full-fashion stockings seamed on the outside, intending they should be worn reversed. But he thought he would have to come out with a dull finish silk and conceded to the new types of seamless knit a reasonably strong possibility.

Undoubtedly the indicated more popular type of silk stocking for the post Easter trade was that of the dull luster acquired by either knitting super-twist silk, giving hosiery tram a chemical treatment by which the fabric takes on a crepe effect, or knitting silk thrown especially for crepe fabric. A Philadelphia manufacturer believed just prior to Easter that he had solved the problem of using crepe twist silk on full-fashioned machines. He had experimented with six-thread 42-gauge, and planned to have one set of machines devoted to the actual silk crepe construction early in May.

Curtailment Not Deep Enough.

At the outset of the dull luster campaign hosiery stylists were beginning to prophesy trouble for manufacturers of ingrain silk stockings. Women, it was pointed out by a women's shop department manager, buy ingrain for its sheen, and therefore if the dull finish becomes the vogue, ingrain will lose its sales appeal. Prices for this construction appear to have declined more, relatively, than those for dip-dyed, in which, however, there has been the sharper price competition. Thus there is supplied an explanation in part for the ultra cautious policy of department store hosiery buyers. The remainder of the explanation may be divided between styling and a fear of excess stocks. It looked a few weeks ago as if the inside out stocking was losing out to the crepe luster and already was waning in demand, while the feather fashioned was said to be scoring no startling gains.

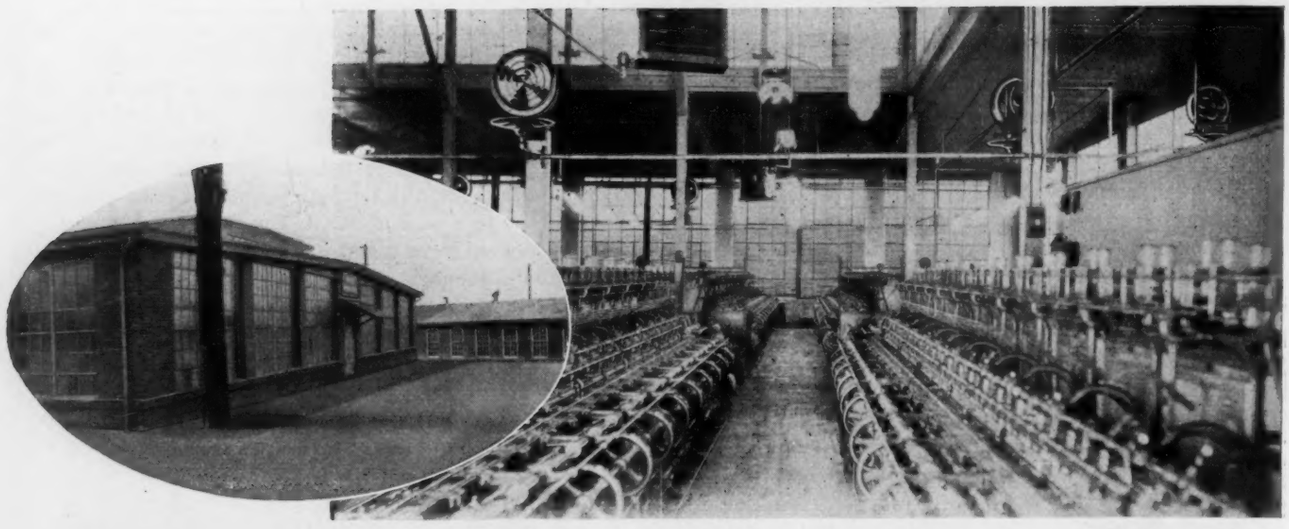
An analysis of the reports of identical manufacturers to the Department of Commerce show that curtailment to February inclusive had not been carried far enough to be felt in any reduction of hosiery in stock in mills, for in that month, while output of all classes combined was less than for the corresponding month of 1929, by a little over eight per cent, there was an increase in the output of women's full-fashioned, all classes, the only division of adults' hosiery in which there was a gain. Production of women's full-fashioned rayon increased in February by 82 per cent over February of last year, and there is shown an output of nearly 10,000 dozens of full-fashioned rayon and cotton in combination last February, in contrast to none reported for the corresponding month of 1929. Comparing production in February in the present and last year, it is found seamless, all classes, this year came out in more than 40 per cent less than the indicated aggregate for the 1929 month, seamless silk dropping back by more than 50 per cent.

Considering the record low prices for full-fashioned silk hosiery, the slipping in seamless causes no surprise among those who watch the ups and downs in the market and seek an explanation for them. The launching of distinctly new types of seamless during the period of the reported direst distress in the full-fashioned group has raised the question whether vogue has started a swing from the fashioned and, if so, how far will it reach in re-establishing the circular knit. The point is made that if seamless silk, to retail for $1.50 a dozen, can in only slight degree displace fashioned at the same or lower price, the latter might be regarded as not so firmly established as was claimed a few years ago.

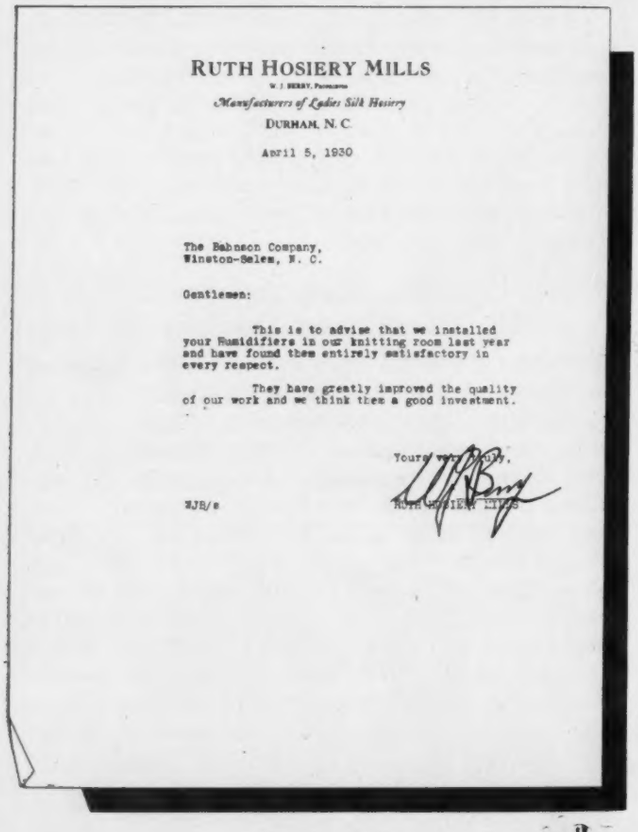
Hosiery Price War Started in Stores; Hits Finer Gauges, Quotations Indicate

IT APPEARS that the price war in silk full-fashioned hosiery is directed mainly against the 45-gauge sector, which represents much of last year's and more recent new installation. Four-thread picot edge, with all the modern conceits in construction for supplying talking points, were sold in the primary markets during March-April for prices varying from around $10.25 a dozen to $11, for comparable goods. Seven-thread silk also of 46-gauge was quoted by competing manufacturers in and near Philadelphia at prices showing a disparity of $1.75 a dozen, and in one instance the lowest figure in the range was declared by a New York buyer to be 25 cents a dozen above a price quoted to him. Necessarily, distress stocks figured in the price competition, supporting the theory of an indicated oversupply of 45-gauge picot-top silks.

Curtailment had been too long delayed. There is held little doubt that March and April reports from manufacturers to the Department of Commerce will account for far deeper cuts than that of February. Really drastic action toward a better balance of production and consumption was commenced only when it became apparent to the more hopeful that Easter sales would fall behind. Following the action of the Berkshire Knitting Mills in reducing working time to five days, a week and the Apex Hosiery Co. operating its plant but four days a week, numbers of smaller mills, notably those having the heavier operating cost, cut



Bahnson Improves Quality *at* Ruth Hosiery Mills



RUTH HOSIERY MILLS
W. J. BERRY, Proprietor
Manufacturers of Ladies Silk Hosiery
DURHAM, N. C.

April 5, 1930

The Bahnson Company,
Winston-Salem, N. C.

Gentlemen:

This is to advise that we installed your Humidifiers in our knitting room last year and have found them entirely satisfactory in every respect.

They have greatly improved the quality of our work and we think them a good investment.

Yours very truly,

RUTH HOSIERY MILLS

WJB/s

Bahnson Humidifiers have been installed in the Ruth Hosiery Mills where they have assisted in improving the quality of the knitted product to a profitable degree.

In knitting mills as well as cotton mills these Bahnson units are not only paying for themselves but are also *adding to profits* by improving quality—cutting expenses by bettering working conditions.

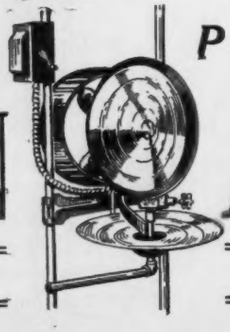
Knitting mill managers should investigate the wonderful possibilities of Bahnson Humidifiers. So simple in themselves, easy to install. They operate independently and require little attention.

Write for information or consultation.

THE BAHNSON COMPANY
HUMIDIFICATION ENGINEERS
WINSTON-SALEM, N. C.
NEW YORK OFFICE, 93 WORTH ST.

The Key to Production

The BAHNSON *Humidifier*



HEALTH — QUALITY — AND EFFICIENCY

their schedules accordingly.

Almost coincidentally with a more nearly universal slowing down on production, shipments improved, as dealers then were taking in their Easter session supplies. There is the presumption, therefore, that last month the industry entered upon a period of stock reduction and that if a low stage of output be maintained during the ordinarily dull summer months, the market may have returned to a practically normal stage for the fall and winter season.

Special sales at markdown prices made for a heavy pre-Easter business in hosiery. Nationally known brands of large mills selling to retailers were sold as low as 99 cents, comparing with $1.50 to $1.75 regularly. But it was observed that, while Philadelphia department stores were conducting such sales, lopping anywhere from 50 to 75 cents from regular prices, the Berger chain of eight hosiery specialty shops adhered rigidly to the dollar price, established some time ago in these stores. With no markdown or newspaper advertising or the slightest departure from their routine, these shops apparently sold as many silk stockings as ordinarily, placing sole dependence for sale promotion upon prestige and window displays.

Prices for 42-gauge chiffons for the dollar a pair bracket have been firmer recently, so far as relates to goods from the better mills. There is evidence at times of some holdings in weak hands. For example, $10 a dozen was, around April 1st, the common price for five-thread 42s with picot top. Yet a large store was able to pick up a lot at a dollar less, for a special sale. A six-thread silk described as 42-gauge was quoted $8.25 a dozen to the retail trade, while a seven-thread 39-gauge was priced 25 cents more. Five-thread 39s in the gray were wanted for seven dollars a dozen. Whether the buyer located any he declines to state. This same operator sold seven-thread 45-gauge in the gray for around $9.50 to $9.75 a dozen.

Sales of seven-thread 42-gauge, silk top and plaited foot, were made at $10.50 a dozen, and the same strand and gauge, mercerized lisle top and foot, at a dollar a dozen less. Both carried picot tops. But during all this price confusion, a manufacturer in a village suburban to Philadelphia sold up production to June and increased his price 50 cents a dozen. He this year began distributing through jobbers, after dissatisfaction with, first, with selling in the gray and afterward to retailers. "We find it better to sell to jobbers at wholesale prices than to retailers at jobber prices," he stated. Another rural mill, after being idle for some weeks, last month was operating full time with manufacturing for but one account, a Chicago retail store. "When we must accept jobber prices from retailers," says the management, "we want only big accounts."

Numbers of small mills in Pennsylvania towns and villages seem to have been able to obtain orders after a long-time hunt for them. These are said to be an outstanding factor in this spring's downward price movement. They have reduced cost accordingly, in some instances by accepting proposals of idle operatives offering their services on a basis conforming to competitive market conditions. In one important center, for illustration, experienced help has been tak-

HIGHEST PRODUCTION SIMPLICITY OF OPERATION

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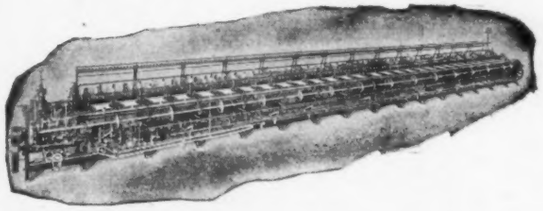

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ing the places formerly filled by learners and helpers. This plan, it is explained by a manufacturer, serves to check an increase in the number of new operatives in a department that is much oversupplied, displaces persons of lower earning power and gives the mill a reduced production cost, which enables it to continue to give employment to its usual quota. One authority estimated several weeks ago there then were 6000 idle full-fashioned hosiery mill operatives by reason of slack mill conditions in Pennsylvania and New Jersey.

Early Appearance of Barelegged Girls Presages Anklet Season, Say Observers

TAKING NOTE of the early appearance in public of girls in their early 'teens barelegged, watchful factors in the juvenile hosiery division predict a large distribution of ankle socks. In fact, the business placed with manufacturers is reported ahead of that of last year to April. Close observers say that even during the chilly days of March and April girls of school age were wearing their stockings rolled down to shoe top or were in anklets. So, manufacturers have had fair deliveries, sufficient, mill agents state, to virtually give assurance the girls' socks have registered as a summer fad. Few persons in the trade say they look for women to take to either anklets or bareleg stockings. Several manufacturers who last summer "made a killing" with their 300-needle very sheer stockings say they have had inquiry for them for the coming season, but that very few inquiries have been translated into orders. Some say that at current low prices for regulation sheer silk stockings it probably will be difficult to match last year's sales of the bareleg substitutes for stockings.

It transpires that the 1929 season ended so abruptly that rather large carryover stocks remained in the hands of some of both mills and merchants, and that therefore there is much resistance to mills' appeals for early orders. Manufacturers point out that when John Wanamaker's offers "10,000 pairs of chiffon weight hosiery, silk from toe to top," for one dollar a pair, described as "the identical sort seen in other goods shops at $1.65," as was the case quite recently, there would appear hard sledding ahead for gauzy seamless, even though intended to be worn as a deception rather than for service.

While there probably is less price distress in juvenile hosiery lines and in women's seamless, both are looked upon as among the more speculative items in hosiery as a division of textiles. Details are especially slow as regards infants' socks. Shipments have been fair to good, some few mills faring exceptionally well. This is true also of children's lines generally, new business developing at a pace indicating severe conservatism among jobbers. Manufacturers state in a casual way they have managed to reduce their stocks and are accumualting no goods in anticipation of repeat orders which seem assured—at buyers' convenience.

Discontinues Fancy Half Hose Numbers.

Among the few manufacturers of men's half-hose to discontinue knitting all of their fancy numbers is the F. Y. Kitzmiller Hosiery Co., Reading, Pa., selling directly to the retail trade. The company was unwill-

MORE THAN
SKIN DEEP
Goodness in yarns must be more than skin deep if the trade is to be satisfied. Quissett realized this fact. That is why they have always kept one of the best staffs of expert yarn men in the country working full time to uphold the quality as well as beauty of Quissett Yarns.
Thus, Quissett goes beneath the surface of beauty to provide their clients with the kinds of yarns that make up into textiles and garments of reputation.
At present 80,000 spindles are kept busy turning out quality yarns for those plants desiring the unusual in yarns.
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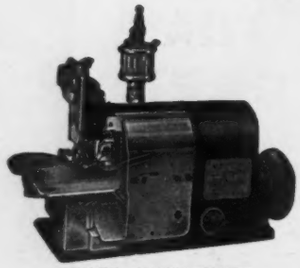

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For simultaneously trimming and joining ends of cotton, silk or woolen piece goods with a

FLAT BUTTED SEAM

Permits goods to pass through finishing machines, uninterrupted, for such operations as Shearing, Calendering, Mercerizing, Bleaching, Dyeing and Printing—with *remarkable saving*—both in labor and fabric.

Butted Seam, natural size, made by STYLE 60 ABB MACHINE on Cotton Goods which have been subsequently processed. The STYLE 60 D3B makes a similar though much wider seam designed for use on sleazy or loosely woven goods to insure holding.

OTHER RECENT DEVELOPMENTS—FOR THE RAYON TRADE

STYLE 60 RD —For a three-thread overedge finish, either straight or scalloped, on Rayon Bedspreads and other sleazy articles on which the ordinary edge finish will not hold.

STYLE 60 JDC—For two-thread **FLAT SEAMING** on Rayon Underwear.

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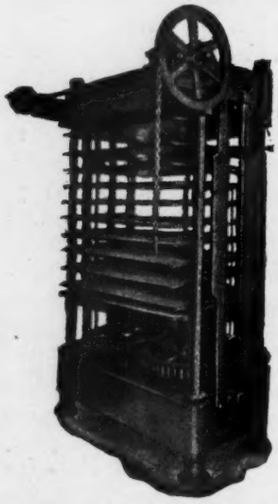

RELIANCE

Hot Plate Screw Press
FOR
Hosiery and Underwear

Write for Catalog and Prices

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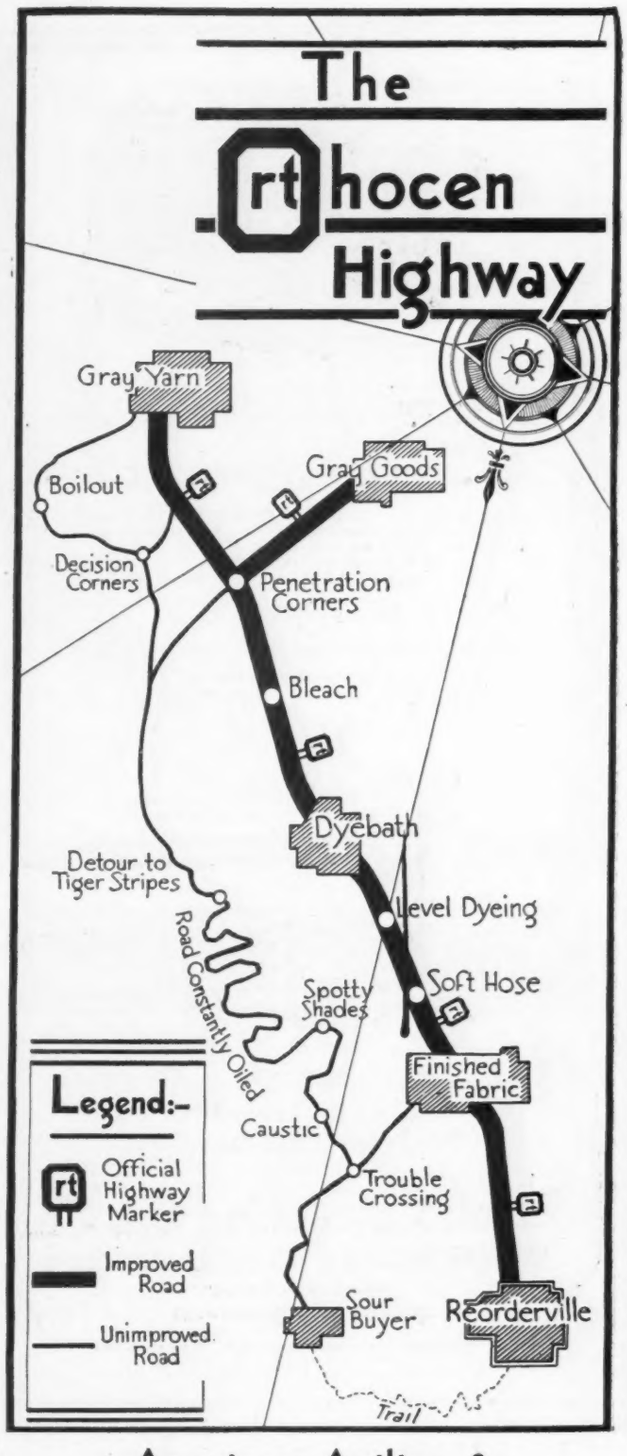
ing to enter competition for business in 35-cent numbers in patterns and was unable to produce the higher priced in volume. Mills distributing through jobbers have been dissatisfied for some time with lateness of orders and tardiness of distributors to supply shipping instructions, with the result probable accumulations might have to be classed as old patterns before leaving mill warehouse.

It is the opinion of some of the larger half-hose interests that only a comparatively few manufacturers whose nationally advertised brands are sold to retailers can manufacture fancy designs profitably; that they have solved the problem of how to help dealers to sell their brands, and gauge fairly accurately the stores' prospective requirements, and by limiting output of any one number, escape having leftovers. These few mills employ intensive merchandising methods in their own distribution and that of their customers; the latter fare well in margin of profit per unit and as they therefore want to retain a given line, must take care of maturing invoices promptly. These things are not possible with the manufacturer not well financed, and it is pointed out that as the time is not opportune for any change in selling policy which would require an expenditure materially reducing a mill's bank balance, a relatively few powerful concerns have a virtual monopoly of the fancy half hose business on a really profitable scale, but are finding competition with manufacturers of appealing low end types a costly matter, some of the latter also having facilities for keeping their trade from slipping.

Underwear Primary Markets Slow but Firm While Buyers Vainly Wait for Low Cotton

FORTIFIED by a rising cotton market, manufacturers of men's heavy weight cotton ribbed underwear have been pretty well able to maintain prices, at a loss of early business, however. It has been a long drawn-out struggle on the part of wholesale distributors to force mills to accept lower prices as a premium for orders; and the jobbers withholding orders appear to have gained nothing more than time in deliveries, which means they will be meeting invoices about the time they commence shipping to their trade.

A comparison of notes by representatives of a half dozen or more representative manufacturers in the last week in March was made the basis of an estimate that not more than 20 per cent of men's heavy weights which it is reasonable to assume will be required for 1930 distribution, had been contracted for. The New York primary markets report not a fair amount of buying in April, increasing as the month advanced. For a time, while raw cotton was firming, there continued speculation among jobbers whether manufacturers might not be worn out with waiting for orders then past due. The mill men withstood the ordeal, some business since has come through and late forecasts were that much activity would be seen in May, with a probability that by the end of the month less than 50 per cent of jobbers' needs for Fall would remain to be bought. The heavy weight market may be said to be more nearly in sellers' favor than at any time prior to April. But it is a question whether advances com-



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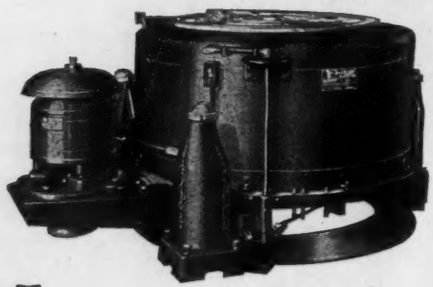

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YOU know the advantages of having in service an extractor that is accessible from every side—a machine as compact, as smooth running, as mechanically simple as the American Open-Top Extractor. AND NOW YOU MAY ALSO HAVE YOUR O-T WITH A MONEL METAL BASKET!

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In 100 and 150 pound Cylinders, Ton Drums, and Tank Cars.

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MANUFACTURERS OF
Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

mensurate with higher cotton value could be undertaken now without causing jobbers to retire from the market.

Business in men's light weight knitted underwear has been satisfactory to most mills. Athletic shirts, and union suits with the back cut out to near the waist line, making that also an athletic garment, have had an active market, sales of some of the leading mills running ahead of early expectations. Particularly have nationally advertised lines moved in increasing volume, one of the larger and better known manufacturers exhibiting evidence of enormous gains in its varied lines as a whole, embracing knitted cotton, nainsooks and kindred fabrics, and rayons, each in a range so comprehensive that the aggregate is confusing. But this concern cannot be cited as a criterion, for it employs intensive marketing methods and the stock control system, distributes through relatively few jobbers and is able to maintain retailer prices at a level showing a satisfactory margin of profit for mill, middleman and retail merchant.

Wary of Rayon Underwear.

Since the Lincoln Hosiery Corporation, Philadelphia, discontinued the manufacture of women's rayon underwear some weeks ago, report has made its appearance that a more widely known manufacturer, operating in New Jersey, contemplates withdrawing from the rayon field, for the same reason assigned by the Lincoln company—unwillingness to try to compete with the trashy, notably in women's lines.

According to a mill executive in Reading, some very cheap rayons are sold to dealers by weight, the garments being paper-wrapped instead of packed in cartons. Bloomers out of one such lot were on sale in a Pennsylvania department store for 29 cents.

This is the type of rayon underwear that cuts into the sales of the legitimate, causes many persons who buy it to return to cottons, and moves manufacturers of standard grades to also abandon rayon for cotton. In men's rayons, even the best types of union suits are sold without such a guarantee as goes with cotton garments, and some retailers prefer to carry none. This was brought out in recent interviews with representative retail stores.

Drooping Worsted Yarn Prices Retard Knitted Outerwear Booking.

Two manufacturers of women's underwear of both cotton and rayon in only the better grades of fabric and construction might be mentioned as well supplied with orders for cottons. Their initial sales for spring have been followed by a healthy flow of repeat orders, and each has booked a satisfactory volume of business in medium weights. Current shipments, according to the sales organizations, are in small quantities, but are going forward each day. The same mills are equally busy with their rayon numbers, it is stated, and both have had a better season to date than in the first four months of last year, and it is known that neither has deviated from its price list. Conditions in these mills probably are not typical of those in the average similar establishment. The executive of one said, "there is little wrong with the women's underwear business except illegitimate competition."

BONE-DRY UNSHRINKABLE WELL-FINISHED

HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.

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STANDARDIZED SUNLIGHT

SUN FADING REACTIONS

Definite knowledge of sun fading reactions are today vital—as essential in the manufacture of cotton fabrics as any one of the steps of the journey from field to loom. Exactly what may be expected in color fastness to sunlight of any piece of cotton cloth can now be speedily and accurately foretold by Fade-Ometer—the accepted safeguard in buying, selling and measuring where color is involved. 43 hours in Fade-Ometer is equivalent to the sun reaction of 30 days of June sunlight. Investigate.

And Laundering Too

Launder-Ometer—adopted by the American Association of Textile Chemists and Colorists as the Standardized Machine for Laboratory Washing Tests—gives in two hours color fading and material wear results equal to twenty trips to the commercial laundry. Complete information about both of the invaluable machines sent gladly.

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ATLAS ELECTRIC DEVICES COMPANY
361 West Superior Street Chicago, Illinois, U. S. A.

THE 43 full-fashioned hosiery machines comprising the plant of the Brentmore Knitting Mills, Inc., Philadelphia, were taken over a few weeks ago by the Lincoln Hosiery Corporation, that city, of which S. A. Kahman, formerly hosiery buyer for Ely & Walker Dry Goods Company, is president. Mr. Kahman says the plant will be operated as a separate unit, increasing the Lincoln company's production by 100,000 dozens a year.

* * *

R. C. HUETTIG, formerly of the Paterson Mutual Hosiery Co., Paterson, N. J., and Philadelphia, who recently bought a substantial block of the stock of the Vogue Silk Hosiery Co., Philadelphia, was elected president and will have charge of sales, through a New York office. The Vogue company, knitting 45-gauge hose, was organized three years ago by Samuel Tait, who resigned the presidency to take the treasureship when Mr. Huettig stepped in, bringing with him F. R Huettig from the Paterson Mutual, who was elected secretary. Mr. Tait headed the Modern Hosiery Mills, a new corporation, which has a mill, recently completed, ready to go in production. The disposition of this enterprise has not been announced, notwithstanding the change in the Vogue organization, which now is selling the retail trade, after distributing through jobbers.

* * *

RETIRING as vice president of the Cadet Knitting Co., removing from Philadelphia to its new full fashioned hosiery mill at Columbia, Tenn., H. M. Gwyn announces he will re-engage in the full-fashioned hosiery business, in or near Philadelphia, and will have associated with him Roy R. Blyn, who has been the company's production manager.

Wholesale distributors of knitted outerwear are charged in the trade with "taking an unfair advantage of manufacturers." Jobbers have taken their spring goods, not in the volume that had been looked for, but are in arrears with orders for sweaters to go into distribution beginning in September. Mills either must make up sweaters in anticipation of distributors calling for them eventually, or slow down on production and risk having nothing to ship when distributor needs become pressing.

The manufacturer's plight is the worse from the fact worsted yarns have been declining in price for some time. Merchants with goods on order have, in many instances, insisted upon a rebating in prices in proportion as yarn cost has dropped. "If we make a downward revision of our prices on goods which are in our warehouse because jobbers asked for deferred shipments and the request was granted, we must reduce our entire line for the remainder of the season," said a mill executive. "If we do not, then, if previous experience is an index, we would receive notice of cancellation. Most of the jobbers refuse to assume their part of the responsibility for having ready-to-deliver goods for the retail trade.

In matter of deliveries the bathing suit mills are in a less perplexing position than the sweater mills. They have made shipment of most of their production against initial orders and are working on repeats. They have had a reasonably good season, assuming the duplicate business will measure up to the normal per cent of the initial. Some bathing suit manufacturers already are discussing yarns and colors for the next season, the opening for which probably will be staged in August. They are heading more and more toward single yarns. These represent the bulk of the shipments for the latter part of the current production season. Prices are lower by around 10 to 15 cents a pound since the beginning of March, due mainly to spinners' eagerness for business.

Is the Cotton Mill Efficient?

MODERN cotton mills have a record of efficiency unequalled by any other industry, according to Leavelle McCampbell, in a pamphlet recently distributed by the Association of Cotton Textile Merchants of New York, of which he is vice-president.

"From a mechanical standpoint," he states, "a poorly run cotton mill is probably more efficient than a well run automobile factory.

"It is one thing to introduce improved methods into an industry thirty years old and quite another thing to attain the same objective in an industry many centuries old. Although the process has been one of trial and error, so many men have devoted their lives to textiles that most good things have been thought out. Real improvements are few and far between. Occasionally they come. The balanced spindle, the knot tier and the automatic loom were long steps forward. The rapidity with which these have become standard practice is a credit to the industry."

As an illustration of the efficiency of an up-to-date cotton mill, Mr. McCampbell points out several steps in the manufacture of an ordinary 80x80 print cloth.

"To make a yard of this cloth," says Mr. McCampbell, "not less than 35,000,000 individual pieces of raw material are gathered by hand from many hundred locations. Each piece is hairlike in diameter and about an inch and a sixteenth long. Dirt and trash must be separated from these bits of material before they can be used. They are then laid in parallel lines and all that do not measure up to the required length are discarded. Next, they are pulled into strands and the strands are spun into yarn.

"The rate at which this is done is amazing. It is not uncommon for spindles to turn at the rate of 10,000 revolutions per minute, a machine speed almost unknown in other industries.

"As a further step in making this cloth 3,120 pieces of this yarn are threaded through heddles. Each of these warp threads goes through a separate eye, hardly larger than that of a needle. One at a time, 2,800 more pieces of yarn are laid in crosswise. As each is laid in, it is pushed into place by a separate operation.

"These six thousand threads intermesh and cross each other nearly 9,000,000 times. If at any crossing one goes under when it should go over, the cloth is laid aside and called a second. When these processes are completed, a yard of this cloth sells for nine cents.

"The weaving machines used are so efficient and so near automatic perfection that in making some fabrics a single weaver can operate successfully as many as a hundred of them.

"In reaching for maximum efficiency the industry has developed artificial weather so that the atmospheric conditions and the temperatures in its mills can be maintained at constant levels. There was a time when the mill followed the climate but today proper climatic conditions are created within the mill."

Copies of the complete pamphlet by Mr. McCampbell may be secured upon request to the Editor of COTTON, or to the Association at the address given.